NATIONAL INSTITUTE OF SIDDHA

TAMBARAM SANATORIUM, CHENNAI - 47

THE TAMIL NADU Dr. M.G.R. MEDICAL UNIVERSITY

CHENNAI - 32

PRECLINICAL AND CLINICAL STUDY ON

UTHIRAVATHA SURONITHAM

(DISSERTATION SUBJECT)

For the partial fulfillment of the

requirement to the Degree of

DOCTOR OF MEDICINE (SIDDHA)

BRANCH III - SIRAPPU MARUTHUVAM

2010 – 2013

ACKNOWLEDGEMENT

I express my profound sense of gratitude to **Prof. Dr. K. Manickavasakam, M.D(S),** Director, National Institute of Siddha, Chennai-47.

I extend my sincere heartfelt thanks to **Prof. Dr. R. S. Ramaswamy, M.D(S),** Director General, CCRS, Arumbakkam, Chennai. Former Hospital Superintendent, Head, Department of Sirappu Maruthuvam, National Institute of Siddha, Chennai-47, for his expert, valuable guidance and encouragement in this study.

I express my sincere thanks to **Chairman and Members of Institutional Ethical Committee (IEC) and Institutional Animal Ethical Committee (IAEC),** National Institute of Siddha, Chennai-47, for their valuable guidance.

I express my heartfelt thanks to **Associate prof Dr.N.J.Muthukumar,M.D(S),** Department of Sirappu Maruthuvam, National Institute of Siddha, Chennai-47, for his valuable guidance and encouragement.

I express my sincere thanks to **Dr.V.Mahalakshmi, M.D(S), Dr.M.V.Mahadevan, M.D(S), Dr.D.Periyasami,M.D(S),** Faculties, Department of Sirappu Maruthuvam, National Institute of Siddha, Chennai-47, for their valuable guidance and encouragement.

I express my heartfelt thanks to **Associate prof Dr.M.Rajasekaran,M.D(S),** Department of Gunapadam, National Institute of Siddha, Chennai-47, for his valuable guidance and encouragement.

I express my thanks to **Assistant Prof Dr.V.Suba,M.Pharm,Ph.d,** Pharmacology, National Institute of Siddha, Chennai-47, for her guidance and support in toxicological studies.

I express my thanks to **Assistant Prof Dr.D.Aravind,M.D(S),Msc,** Medicinal Botany, National Institute of Siddha, Chennai-47, for his guidance and support in identification of the plants.

I express my thanks to **Assistant Prof Dr.M.Muthuvel**,**B.S.M.S,Ph.d,** Biochemistry, National Institute of Siddha, Chennai-47, for his guidance and support in Biochemical analysis.

I am very much grateful to **Prof. Dr. P.Rathinavelu, M.S(Ortho), D.Ortho,** Department of Orthopaedics, Stanley Medical College, Chennai-1 for his encouragement.

I gratefully acknowledge the support of **Prof. Dr. R. Murugesan,** Scientific Officer, Sophisticated Analytical Instrument Facility, IIT, Chennai-36 for his guidance in Heavy Metal analysis.

I express my thanks to **Mr.M.Subramanian**, (Statistics) Senior Research Officer, National Institute of Siddha, for the valuable statistical guidance.

I like to thank all my patients who have given their consent to record their case materials and for their co-operation.

I take this opportunity to thank **my parents A.Shanmugam, S.Valliyammal** and my **friends** for their Co-Operation and Moral support from the very beginning of my career.

INTRODUCTION

In Siddha system of medicine the diseases are classified into three major categories that is Vatham, Pitham, and Kabam diseases. Siddha system is broadly classified into 4448 diseases which **Yugimuni** says to vatha diseases are 80 in number. In which "**Uthira vadha Suronitham"** is one among them and the signs and symptoms of this disease can be correlated with **Rheumatoid Arthritis (R.A)** in Modern science.

In Siddha system of medicine many formulations have been indicated for challenging and chronic diseases like Cancer, Brain tumours, Blood cancer, Cardiac diseases,Rheumatoid Arthritis, Oesteo Arthritis. (Ref: http//www.sysindia.com/medical/about siddha.html)

Rheumatoid Arthritis (RA) is the most common persistent inflammatory arthritis, occurring throughout the world and in all ethnic groups. The clinical course is prolonged, with intermittent exacerbations and remissions.

About 1% of the world's population is affected by rheumatoid arthritis, women three times more often than men. The incidence of RA is of 3 cases per 10,000 population per annum. Onset is uncommon under the age of 15 and from then on the incidence rises with age until the age of 80.[Reference: Davidson's Principle and Practice of Medicine, pg no:1088].

In India the prevalence of this disease affecting 0.75% of population. Projected to the whole population, this would give a total of about seven million patients. The prevalence of RA in India is quite similar to that reported from the developed countries. (Ref: Prevalence of Rheumatoid Arthritis in adult Indian population, Department of medicine, AIMS, New Delhi).

Around 40% of RA patients are registered disabled within 3 years; around 80% are moderately to severely disabled within 20 years and 25% will require a large joint replacement.(Reference: Davidson's Principle and Practice of Medicine, pg no:1088).

Many siddha formulations available to treat Uthira vatha suronitham in Siddha system. So, Author chosen this siddha preparation after elaborated search and it is aimed to reducing not only the pain but also the restricted movements and other symptoms of this disease Uthira vatha suronitham. Here, the author have chosen the drug "**Amirtharasa Maathirai"** (Ref: Agasthiyar Mani 4000 ennum Vaithiya Chinthamani Venbaa 4000 second part) as Internal Medicine and **Suronitha Vatha Ennai** (Ref: Theraiyar Vagadam) as External Medicine.

AIM AND OBJECTIVES

PRIMARY OBJECTIVE:

To Evaluate the Safety and Therapeutic efficacy of "**Amirtharasa Mathirai**" (Internal) and "**Suronitha Vatha Ennai**" (External) in reducing the pain and restricted joint movements in the treatment of "**Uthira Vatha Suronitham** (Rheumatoid Arthritis)."

SECONDARY OBJECTIVES:

1. To screen the elements present and the particle size of the elements in the trial drug.
2. To evaluate the safety of trial drugs by doing Acute toxicity studies in animal models.
3. To access the predominance of the disease related to Age, Sex, Socio-economic status, Habits, Family history etc.,
4. To correlate the etiology, clinical features, signs and symptoms of Uthiravatha Suronitham in Siddha system to Rheumatoid Arthritis in Modern science.
5. To access the Siddha basic principles like Envagai thervu, Neerkkuri and Neikkuri pattern in Uthira Vatha Suronitham patients.
6. To access the effect of Varmam in Uthira vatha Suronitham patients.
7. To find out whether there are any side effects/ adverse effects produced by the trial drug Amirtharasa Mathirai (Internal) during treatment.

REVIEW OF LITERATURE

SIDDHA ASPECTS

UTHIRAVATHA SURONITHAM

Siddha system of Medicine is an ancient one with spiritual and qualities. The sources of Siddha medicines include Herbs, Minerals, Metals and also Living kingdoms.

Siddha system was propounded by the siddhars is a vast and unique system which defines health as a perfect state of physical, psychosocial, social and spiritual well being of an individual.

The system not only deals with medicinal but with spirituality, righteous way of living, Rejuvenation and its main aim is attainment of perfection.

"அண்டத்திலுள்ளதே பிண்டம்
பிண்டத்திலுள்ளதே அண்டம்."

- சட்ட முனி ஞானம்.

The universe around as in the Macrocosm (Andam) and the human body is considered as the Microcosm (Pindam). Any changes in the Macrocosm will have its impact in the Microcosm in the human body.

"நிலந்தீ நீர்வளி விசும்போ டைந்தும்
கலந்த மயக்கம் உலகம் ஆதலின்
இருதிணை ஐம்பால் இயனெறி வழா அமைத்
திரிவில் சொல்லொடு தழாஅல் வேண்டும்."

-தொல்காப்பியம் பொருள் அகராதி.

The poet explains that both Andam and Pindam formed by the basic five elements called pancha boodhams. They are

1. Pirithivi (Earth)
2. Appu (Water)
3. Theyu (Fire)
4. Vaayu (Air)
5. Aahayam (Ether)

These five elements combined to form Three Thathus.

1. Vatham
2. Pitham
3. Kabam

These Three Thathu composed of

1. Vatham = Kattru + Aahayam
2. Pitham = Theyu
3. Kabam = Prithivi + Appu

The physiological units of the Human body is otherwise called as Vali (Vatham), Azhal (Pitham) and Iyyam (Kabam). They are also formed by the combination of the five basic elements. Accordingly Vali is formed by the combination of Vayu (Air) and Aagayam (Space). This is the ***Creative force***. Azhal is formed by theyu (Fire). This is the ***Force of Preservation***. Iyyam is formed by Prithivi (Earth) and Appu (Water). This is the ***Force of Protection***. These three humors are in the ratio of 4:2:1 in equilibrium which is a healthy normal condition and disturbance in their equilibrium leads to diseases. This is denoted in

"பொங்கிய தைந்துக்குள் பொல்லாதது இம் மூன்றுதான்
தங்கிய வாயு சமத்தன் மகாவாதம்
பங்கிய வன்னியால் பகுந்தது பித்தமே
பகுந்த சலத்தில் பரிசிக்கும் நல்லையும்
வகுந்த இம்மூன்றால் வளர்ந்தது நோயெல்லாம்
அகுந்தது தானறிந்து அளவிட்ட யோகிகள்
மகிழ்ந்தே யிதில் நின்ற மயக்கம் அறிவாறே."

-பதிணென் சித்தர் நாடி சாஸ்திரம்

These three Thathus Perceived as Naadi which is unique feature of Siddha system. When the above three humours are affected (or) not in a balanced state ,they become Kuttram which predisposes to diseases.

I. Vali (Vatham)

These active elements are always supported by the two stable elements, for change can only happen upon the foundation of stable. Thus Vayu and Aahaayam combine to become "**Vatha humor"** which controls all aspects of movements as well as space with in the body. In spite of this combination, however, Vatham sends to primarily display the characteristics of Vayu-Air. The words "Dry, Light, Cold, Quick, Rough, Minute and Mobile" describes the characteristics of Vatham.

II. Azhal (Pitham)

This is the function that governs all the body's conversion processes as well as its heat and energy producing capacities. Pitham is primarily characterized by the qualities of Theyu, which are "hot, sharp, penetrating, light, acidic, and slightly oily".

III. Iyyam (Kapam):

It controls liquefaction, lubrication and cohesion. It is also responsible for giving solidity and structure to the body. Kabam primarily reflects the qualities of the water, but also some traits of the earth elements, consequently, Kabam is heavy, slow, cold, steady, solid and oily.

ARTHRITIS – MOOTTU VALI

Arthritis is a group of conditions involving damage to the joint of the body. There are over 100 different forms of arthritis. Excess of vatham affects the joints all over the body and Vitiation of Kabam causes indigestion. Thus the end product of digestion associated with vatham, pitham, kabam blocks the tissue pores and passages with waxy material. It also affects simultaneously the joints of the body such as knee, shoulder, hip, neck etc. This produces the stiffness of the joints. Hence it is also known as **Mudakku vatham.**

UTHIRAVATHA SURONITHAM

Definition (Iyal)

Uthiravatha Suronitham is a type of Arthritis characterised by pain, swelling, pricking sensation, stiffness of the joints and restriction of movements due to deranged vatham and pitham.

Uthiravatha Suronitham	=	Uthiravatham + Suronitham
Uthiravatham	=	Arthritis of rheumatic origin marked by severe pain and the formation of inflammatory nodules in the region of joints especially in the limbs of the body.
Suronitham	=	Blood and menstrual blood.

a) According to T.V.Sambasivam Pillai.

Suronitham is a disorder of menstruation in women characterized by affection in chest and limbs, extreme sensibility to pain, dryness in the skin, pain in nerves accompanied by intense bodily pain.

AETIOLOGY (நோய் வரும் வழி)

1. **According to Yugi Vaithya Sinthamani,**

"என்னவே வாதந்தா னெண்ப தாகும்
மிகுத்திலே மனிதர்களுக் கெய்து மாறு
பின்னவே பொந்தனையே சோரஞ் செய்து
பெரியோர்கள் பிராமணரைத் தூஷ் ணித்தும்

வன்னவே வச்சொத்திற் சோரஞ் செய்து
மாதாபிதா குருவை மறந்த பேர்க்கும்
கன்னவே வேதத்தை நிந்தைசெய்த பேர்க்குங்
காயத்திற் கலந்திடுமே வாதந் தானே.”
"தானென்ற கசப்போடு துவர்ப்பு ரைப்பு
சாதகமாய் மிஞ்சுகினுஞ் சமைத்த வன்னம்
ஆனென்ற வாறினது பொசித்த லாலும்
ஆகாத் தேறலது குடித்த லாலும்
பானென்ற பகலுறக்க மிராவி ழிப்பு
பட்டினியே மிகவுறுதல் பார மெய்தல்
தேனென்ற மொழியாற் மேற் சிந்தை யாகில்
சீக்கிரமாய் வாதமது செனிக்குந் தானே."
"ஆணான வரன்றனெளயே மதியா மாந்தர்
அகதிபர தேசியர்கட் கன்ன மீயார்
கோனான குரமொழியை மறந்த பேர்கள்
கொலைகளவு பொய்காமங் குறித்த பேர்க்கு
ஊனான சடந்தன்னில் வாதம் வந்து
உற்பவிக்கும் வேதத்தி லுண்மை தானே."

- **யூகி வைத்திய சிந்தாமணி**

According to the saint Yugi’s text, those who are squandering money, insulting the elders, blaspheming the Holy books, not respecting the divine gifts, abandoning or forgetting the parents having wickedness in their mind and those with sleeping in the day time and awake up during night will get Vali diseases, hot taste, increased intake of water, excessive starvation, Increased intake of bitter and astringent taste, increased sexual indulgence desire will produce Vali diseases.

FACTORS THAT INFLUENCE THE VATHA TYPE OF DISEASES:

கால இயல்பு – Environmental Factors:

Relation between occurrence of Vatha Diseases and Paruva Kaalam:

“ஆடியாதியாய் ஐப்பசி ஈறாய்
அனிலமதற் கோரரசியல் காலம்.”

Vatham elevates in the body from the month of Aadi to Iyppasi i,e from the middle of Muthuvenil kaalam, Karkaalam to half of Koothir kaalam.

To summarise, Vatha diseases occur due to certain diet capable of increasing vatham, certain habits and environmental changes which elevates vatham.

Diet

"தொழில்பெறு கைப்புக்கார்த்தல் துவர்த்தல் விஞ்சுகினுஞ்
சோரும் கழையதாம் வரகு மற்றைப்பைந்தினை யருந்தினாலும்
எழில் பெறப் பகலுறங்கி இரவினிலுறங் காததாலும்
மழை நிகர் குழலினாலே வாதங்கோ பிக்குங் காணே."

- பரராச சேகரம்

According to Pararasa Sekeram, excess consumption of bitter taste, astringents and sour tastes, increased intake of old cooked rice, intake of grains, persons who are sleeps in the day time and wake up at night time will get Vatham diaeases.

CLINICAL FEATURES OF UTHIRAVATHA SURONITHAM:

"வைகிதமாய்க் கணைக்காலு முழங்கால் தானும்
மற்கடக் சந்து புறவடியும் வீங்கிச்
செய்கித மாற் சிறுவிரல்கள் மிகவும் நொந்து
சிந்தை தடுமாறியே சலிப்புண்டாகும்
பைகிதமாம் பயித்தியத் தில்லாத மிஞ்சிப்
பாரமாய் உற்பவித்து அழலுண்டாகும்
உய்கிதமாம் அசனமது தானும் வேண்டா
உதிர வாத சுரோரிணிதத்தி னுணர்ச்சியாமே."

-யூகி வைத்திய சிந்தாமணி

It is characterised by pain and swelling in both ankle joints, knee joints and all smaller joints of the hands, feeling of tiredness, fever, loss of appetite and mental depression.

Also the term 'Markadam' (**மற்கடம்**) indicates the hand of monkey (T.V.Sampasivam Pillai dictionary Pg no: 753) anatomically which can be correlated clinically with Swan neck deformity and wasting of thenar muscle in Rheumatoid Arthritis.

2. THE CLINICAL FEATURES OF UTHIRAVATHA SURONITHAM IN 'PARA RASA SEKARAM':

"பக்கமும் மார்பும் கூடப்பற்றியே இழுத்துக் கொண்டு
நெக்கியே மார்பிளைத்து தோதாய் நரம்பிழுத்து
ஒக்கவே சயித்தியங்கள் உயர்ந்துடன் மேலும் காலம்
மிக்குமே உதிரவாதம் என்றிது விளம்பலாமே."

- பரராச சேகரம்

It is characterised by pain and tenderness of the axilla, breathlesness, pain in the upper limbs and the lower limbs.

நோய்க்கணிப்பு (DIAGNOSIS)

"நோய்நாடி நோய்முத னாடி யதுதணிக்கும்
வாய்நாடி வாய்ப்பச் செயல்."

-திருக்குறள்.

This Thirukural quote explains the importance of diagnosis as it is to be made in order of the aetiology, root of cause of the disease thereby treating the disease with appropriate medicine.

Piniyari muraigal (Method of Diagnosis)

Piniyari muraigal (Method of Diagnosis) is based upon the three main principles:

- Poriyal Arithal (Inspection)
- Pulanal Arithal (Palpation)
- Vinaathal (Interrogation)

Poriyalarithal (Inspection):

“Poriyalarithal” means examining the “Pori” of the patient by the physician for proper diagnosis.

Pori - five sense organs.

They are as follows,

- Nose
- Tongue
- Eye
- Skin
- Ear.

2. **Pulanalarithal (Palpation):**

“Pulanal arithal” means examining the “Pulan” of the patient by the physician to diagnosis a disease.

Pulan - senses

They are,

- Smell
- Taste
- Vision
- Sensation of touch
- Hearing

3. Vinaathal (Interrogation):

Vinaathal is gathering of information about the history of the disease, its clinical features etc., from the patient or his close relatives who are taking care of them. Vinaathal is helpful when the patient is not in a position to speak or when the patient is child.

Types of Naadi (Pulse) felt in Uthiravadha Suronitham:

In Siddha system of Medicine "Naadi diagnosis (Pulse reading)" is the first and foremost diagnostic parameter.

In Uthiravadha Suronitham the following types of Naadi can be commonly seen. They are,

- Vadhapitham
- Vadhakabam
- Pithavadham
- Kabavatham

DIFFERENTIAL DIAGNOSIS

Uthiravatha Suronitham is differentiated from other types of Vatha Suronitham as follows:

S.NO	DISEASES	SIGNS AND SYMPTOMS
	Uthiravatha Suronitham	▪ Swelling of ankle joints, hip joints, and knee joints. ▪ Pain and tenderness of minor joints especially phalanges. ▪ Depression. ▪ Loss of appetite. ▪ Increased Vatha and Pitham.
1.	Vatha Suronitham	▪ Emaciation. ▪ Swelling of joints. ▪ Restricted movements. ▪ Joint pain. ▪ Discomfort. ▪ Excessive salivation. ▪ Loss of appetite.
2.	Sithuvatha Suronitham	▪ Anasarca. ▪ Wrinkles. ▪ Neural pain. ▪ Glossy tongue. ▪ Sialorrhoea.

		▪ Bullous eruption as in burn. ▪ Exfoliation,swelling and Warmthness.
3.	Vaikitha Vatha Suronitham	▪ Swelling with hyperaemia. ▪ Soft on touch. ▪ Cough with pyrexia. ▪ Irritability.
4.	Paithiya Vatha Suronitham	▪ Hyperaemia. ▪ Tenderness in knee, elbow and smaller joints. ▪ Poly arthralgia. ▪ Pyrexia. ▪ Anaemia.
5.	Slethumavatha Suronitham	▪ Chillness with abdominal distension. ▪ Severe pain and Head ache. ▪ Syncope and Hallucination. ▪ Dryness of mouth and Anorexia. ▪ Tachycardia.
6.	Utharavatha Suronitham	▪ Fever with rigor. ▪ Dryness of mouth. ▪ Pain in all over the joints. ▪ Headache. ▪ Diarrhoea. ▪ Excessive thirst. ▪ Hunger.

LINE OF TREATMENT

In Siddha system, the treatment is based upon the Mukkutram principle. Treatment is not only for perfect healing but also for the Prevention of disease progression and Rejuvenation of Udal kattugal.

While treating a disease, it is essential to know the etiology, the nature of the patient, severity of the illness, the seasons and the time of occurrence.

Line of treatment is as follows:

Kappu (Prevention)

Neekkam (Treatment)

Niraivu (Restoration)

I.KAAPPU (PREVENTION):

"Prevention is better than cure" is a proverb. Knowing the cause there by removing it and thus preventing the disease is the main aim of Siddha system of medicine.

Siddha system emphasizes the purification of thought and activities in the underlying lines quoted from the text **"Theraiyar Pinianuga Vithi"** which emphasizes virtueness to be followed even in the daily life activities.i.e.,

பாலுண்போம் எண்ணெய்பெறின் வெந்நீர் குளிப்போம்
பகற்புணரோம்; பகற்றுயில்வோம்: பாயோதரமு மூத்த
ஏலஞ்சேர் குழலியரோ டிளவெயிலும் விரும்போம்;
இரண்டடக்கோம்; ஒன்ரைவிடோம்; இடதுகையிற் படுப்போம்;

2.NEEKAM (TREATMENT IN SIDDHA):

The aim of treatment is based on,

a) To bring the Three Thodams to normal equilibrium state.

b) To treat the patient by Internal and external medicines.

c) To stabilize 7 Udal thadhukal and 3 Uyir thadhukal.

To bring the three Thodams to normal equilibrium state first by giving purgation.

Purgation drug:

Purgation with Agasthiyar Kuzhambu – 1 Kundri(130 mgs) o.d early morning with Ginger juice will be given for balancing the deranged mukkutram on the first day of the treatment.

Internal Drug:

Amirtharasa Mathirai - 1 Kundri(130 mgs) (twice a day) with water

External Drug:

Suronitha Vatha Ennai - External application over the affected joints.

Diet Restrictions (Pathiyam):

During the course of treatment, the patients were advised to follow certain diet restrictions (Icha pathiyam) which is mentioned for vatha diseases.

1. Kadugu (Mustar seed)
2. Ell Nei (Gingelly oil)
3. Kalyana Poosanikkai
4. Kadalai
5. Thengai
6. Mangai
7. Poondu
8. Pala

9. Kollu
10. Pugaiyilai
11. Pagal
12. Agathi
13. Sour taste
14. Astringent taste

3. NIRAIVU (RESTORATION):

Reassurance from disease recovery was given to all patients by promoting the awareness about the dietary, seasonal, emotional influence on the disease. Life-style modification was also advised to them.

YOGAM FOR UTHIRAVATHA SURONITHAM:

The patients are advised to do the following Yogasanas regularly.

- Poorna santhi asanam
- Mathriga pranayamam

In case of sleep disturbances and depression:

Nithirai pranayamam and Dhiyanam.

MODERN ASPECTS

Rheumatoid Arthritis

An Introduction:

Rheumatoid Arthritis is a systemic inflammatory disease which manifests itself in multiple joints of the body. The inflammatory process primarily affects the lining of the joints (synovial membrane), but can also affect other organs. The inflamed synovium leads to erosions of the cartilage and bone and sometimes joint deformity. Pain, swelling, and redness are common joint manifestations. Although the definitive causes are unknown, RA is believed to be the result of a faulty immune response. RA can begin at any age and is associated with fatigue and prolonged stiffness after rest. There is no cure for RA, but new drugs are increasingly available to treat the disease. In addition to medications and surgery, good self-management, including exercise, are known to reduce pain and disability.

Definition:

A chronic autoimmune disease characterized by progressive arthritis of several small or medium-sized joints, especially in the hands. Symptoms can include morning stiffness, joint swelling and weakness, and deformity and disability.

History:

The first known traces of Arthritis date back at least as far as 4500 BC. A text dated 123 AD first describes symptoms very similar to Rheumatoid Arthritis. It was noted in skeletal remains of native americans found in tennessee. In the old world the disease is vanishingly rare before the 1600AD. And on this basis investigators believe it spread across the atlantic during the age of exploration. In 1859AD the disease acquired its current name.

An anomaly has been noticed from investigation of precolumbian bones. The bones from the tennessee site show no signs of tuberculosis even though it was prevalent at the time throughout the America. Jim mobley has discovered a historical pattern of epidemics of tuberculosis followed by a surge in the number of Rheumatoid Arthritis cases a few generations later. Mobley attributes the spikes in arthritis to selective pressure caused by tuberculosis. A hypervigilant immune system is protective against tuberculosis at the cost of an increased risk of autoimmune disease.

The first recognized description of Rheumatoid Arthritis was in 1800 by the French physician Dr Augustin Jacob Landré-Beauvais (1772-1840) who was based in the famed Salpêtrière Hospital in Paris. The name "Rheumatoid Arthritis" itself was coined in 1859 by British Rheumatologist Dr Alfred Baring Garrod.

Epidemiology:

The incidence of RA is in the region of 3 cases per 10,000 population per annum. Onset is uncommon under the age of 15 and from then on the incidence rises with age until the age of 80. The prevalence rate is 1%, with women affected three to five times as often as men. It is 4 times more common in smokers than non-smokers.

In India the prevalence of this disease affecting 0.75% of population. Projected to the whole population, this would give a total of about seven million patients. The prevalence of RA in India is quite similar to that reported from the developed countries. Some Native American groups have higher prevalence rates (5-6%) and people from the Caribbean region have lower prevalence rates. First-degree relatives prevalence rate is 2-3% and disease genetic concordance in monozygotic twins is approximately 15-20%.

It is strongly associated with the inherited tissue type Major histocompatibility complex (MHC) antigen HLA-DR4 (most specifically DR0401 and 0404) — hence family history is an important risk factor.

Clinical sign and symptoms:

Joint pain can be an early symptom of many different diseases. In rheumatoid arthritis, symptoms often develop slowly over a period of weeks or months. Fatigue and stiffness are usually early symptoms. Weight loss and a Low-grade fever can also occur.

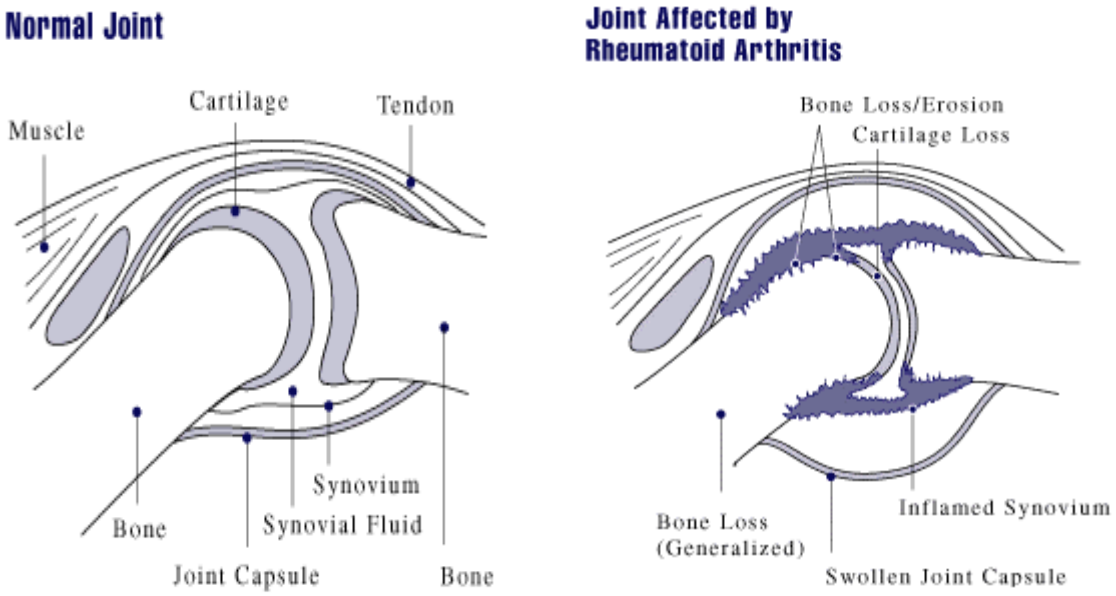
Joint symptoms include:

Painful, swollen, tender, Stiff joints. The same joints on both sides of the body (symmetrical) are usually affected, especially the Hands, Wrists, Elbows, Feet, Ankles, Knees, or Neck.

Morning stiffness, Joint stiffness may develop after long periods of sleeping or sitting. It lasts at least 60 minutes and often up to several hours.

Rheumatoid nodules ranging in size from a pea to a mothball develop in nearly one-third of people who have rheumatoid arthritis. Nodules usually form over pressure points in the body such as the elbows, knuckles, spine, and lower leg bones. In addition to specific joint symptoms, Rheumatoid Arthritis can cause symptoms throughout the body (systemic). These include:

- Fatigue,
- Loss of appetite,
- Weight loss,
- Mild fever.



` When the disease is active, symptoms can include fatigue, loss of energy, lack of appetite, low-grade fever, muscle and joint aches, and stiffness. Muscle and joint stiffness are usually most notable in the morning and after periods of inactivity. Arthritis is common during disease flares. Also during flares, joints frequently become red, swollen, painful and tender. This occurs because the lining tissue of the joint becomes inflamed, resulting in the production of excessive joint fluid. The synovium also thickens with inflammation.

Comparing Rheumatoid Arthritis and Osteoarthritis - Topic Overview

Rheumatoid Arthritis and osteoarthritis are different types of arthritis. Although they share some similar characteristics, each has different symptoms and requires different treatment. Therefore, an accurate diagnosis is important.

Osteoarthritis is the most common form of arthritis. Rheumatoid arthritis affects about one-tenth as many people as osteoarthritis. The main difference between osteoarthritis and Rheumatoid Arthritis is the cause behind the joint symptoms. Osteoarthritis is caused by mechanical wear and tear on joints. Rheumatoid Arthritis is an autoimmune disease in which the body's own immune system attacks the body's joints.

Etiology:

The exact causes of RA are unknown. But research has shown that several factors may contribute to the development of RA:

- **Genetic -** Certain genes play a role in the immune system - for some people, genetic factors may be involved in determining whether they will develop RA.

- **Environmental -** In people who have inherited a genetic tendency for the disease, RA can be triggered by an infection. However, RA is not contagious.

Risk Factors of Rheumatoid Arthritis:

Rheumatoid Arthritis is more common in women than in men. In fact, 70% of the patients with Rheumatoid Arthritis are women. In addition, there's an increased risk of Rheumatoid Arthritis in women who have never been pregnant and in those who have recently given birth.

Rheumatoid Arthritis has a genetic link, and the disease can run in families. People with specific human leukocyte antigen (HLA) genes have a greater chance of developing Rheumatoid Arthritis than people who do not have the HLA genes. Still, not everyone with the HLA genes develops rheumatoid arthritis.

Older age and cigarette smoking may increase the risk of getting Rheumatoid Arthritis.

TRIGGERING FACTORS:

- Infection
- Vaccination
- Physical trauma
- Psychological stress

PATHOPHYSIOLOGY

Rheumatoid disease is considered to be an auto immune response to an unknown antigen and the antibody formed is the rheumatoid factor which is identified as immunoglobulin M or IgG.

IMMUNOPATHOGENESIS:

- In response to antigenic exposure (E.g.infectious agent) in a genetically predisposed individual (HLA-DR), CD4+ T-Cells are activated.
- These cells elaborate cytokines, the important ones being tumour necrosis factor (TNF)-α, Interferon (IF)-γ, interleukin (IL)-1 and IL-6.These cytokines activate endothelial cells, B lymphocytes and macrophages.
- Activation of B cells releases IgM antibody against IgG (i.e.anti-IgG) ; this molecule is termed rheumatoid factor (RF).
- IgG and IgM immune complexes trigger inflammatory damage to the synovium, small blood vessels and collagen.

- Activated endothelial cells express adhesion molecules which stimulate collection of inflammatory cells.
- Activation of macrophages releases more cytokines which cause damage to joint tissues and vascularisation of cartilage termed pannus formation.Eventually damage and destruction of bone and cartilage are followed by fibrosis and ankylosis producing joint deformities.

STAGES IN PATHOLOLGY OF RHEUMATOID ARTHRITIS

I. Pathology of Joints and Tendons.
II. Pathology of Extra-articular tissues.

I. PATHOLOGY OF JOINTS AND TENDONS

It can be explained in three stages.

1. Synovitis.
2. Destruction.
3. Deformity.

1. Synovitis:

Initial lesion occurs in the synovium, leading on to vascular stasis, and infiltration of the subsynovial layers with inflammatory cells and formation of fibrinous exudates. Synovial hypertrophy occurs with the thickening of capsular structures.

Though this stage is painful, swollen and tender, their structures are still intact and mobile. So, these disorders are reversibly potential.

2. Destruction:

Pannus formation:

Hypertrophied synovium along with granulation tissue leads to formation of pannus which enroaches the articular cartilage from its periphery.

Articular cartilage:

The articular cartilage gets destroyed gradually.Further the bony surface is involved, leading to obliteration of joint face. Joint get destroyed and deformed.

3. Deformity:

The extending granular pannus gets into fibrous tissue, which bridges the articulating bone ends, leading to fibrous ankylosis and later bony ankyosis.

Muscles, tendons, and soft tissues around the joint also undergo inflammatory changes and get contracted or ruptured.

Juxta-articular osteoporosis occurs**.**Not all patients progress through all three stages.

THE HAND AND WRIST:

As the disease progresses, joint activity limitation, thenar muscle atrophy, muscle imbalance between the forces, or damage to the articular surface can lead to many types of Rheumatoid hand deformities.

1. Swan neck deformity
2. Z deformity or hitch
3. Equinus deformity
4. Ulnar deviation of the hand
5. Boutonniere's or button hole deformity
6. Morant Baker's cyst
7. Trigger finger

Ankle, Toe joints:

1. Callosity under pressure
2. Plantar callosity
3. Atrophy of plantar metatarsal fat pad.
4. Prominent metatarsal head
5. Excessive plantar tilt of meta tarsals
6. Claw toes
7. Hammer toes
8. Rheumatoid nodules
9. Calcaneal erosions
10. Achilles tendinitis
11. Flattening of longitudinal arch
12. Bunion
13. Hallus valgus
14. Over- riding of 2 and 3 toes.

Sjogren's syndrome:

Since Rheumatoid Arthritis is a systemic disease, its inflammation can affect organs and areas of the body other than the joints. Inflammation of the glands of the eyes and mouth can cause dryness of these areas and is referred to as Sjogren's syndrome. Dryness of the eyes can lead to corneal abrasion. Inflammation of the white parts of the eyes is referred to asscleritis and can be very dangerous to the eye.

Pericarditis:

Rheumatoid inflammation of the lung lining causes chest pain with deep breathing, shortness of breath, or coughing. The lung tissue itself can also become inflamed, scarred, and sometimes nodules of inflammation develop within the lungs. Inflammation of the tissue surrounding the heart, called pericarditis, can cause a chest pain that typically changes in intensity when lying down or leaning forward.

Rheumatoid Arthritis is associated with an increase risk for heart attack.

Felty's syndrome:

Rheumatoid disease can reduce the number of red blood cells and white blood cells. Decreased white cells can be associated with an enlarged spleen referred to as Felty's syndrome and can increase the risk of infections.

Cancer:

The risk of lymph gland cancer is higher in patients with rheumatoid arthritis, especially in those with sustained active joint inflammation. Firm lumps under the skin can occur around the elbows and fingers where there is frequent pressure.

Carpal Tunnel Syndrome:

Even though these nodules usually do not cause symptoms, occasionally they can become infected. Nerves can become pinched in the wrists to cause carpal tunnel syndrome.

Vasculitis:

A rare, serious complication, usually with longstanding rheumatoid disease, is blood vessel inflammation called Vasculitis and it can impair blood supply to tissues and lead to tissue death. This is most often initially visible as tiny black areas around the nail beds or as leg ulcers.

Diagnostic criteria:

The diagnosis of RA can be made when the following clinical features are all present:

- Inflammatory arthritis involving three or more joints.
- Positive rheumatoid factor (RF) and/or anti-citrullinated peptide/protein antibody (such as anti-CCP).
- Elevated levels of C-reactive protein (CRP) or the erythrocyte sedimentation rate (ESR).
- Diseases with similar clinical features have been excluded, particularly psoriatic arthritis, acute viral polyarthritis, polyarticular gout or calcium pyrophosphate deposition disease, and systemic lupus erythematosus.
- The duration of symptoms is more than six weeks.

The diagnosis of RA may also be made in some patients who do not meet all the criteria.

DIFFERENTIAL DIAGNOSIS

Several other medical conditions can resemble RA, and usually need to be distinguished from it at the time of diagnosis.

- **Crystal induced arthritis (Gout, and Pseudogout):** It usually involves particular joints (knee, Meta tarsal phalanges, heels) and can be distinguished with aspiration of

joint fluid if in doubt. Redness (RA doesn't have redness at the joints), asymmetric distribution of affected joints, pain occurs at night and the starting pain is less than an hour with gout.

- **Osteoarthritis :** Distinguished with X-rays of the affected joints and blood tests, age (mostly older patients), starting pain less than an hour, asymmetric distribution of affected joints and pain worsens when using joint for longer periods.
- **Systemic Lupus Erythematosus (SLE):** Distinguished by specific clinical symptoms and blood tests (antibodies against double-stranded DNA).
- **Psoriatic arthritis:** Resembles RA nail changes and skin symptoms distinguish between them.
- **Reactive Arthritis (previously Reiter's disease):** Asymmetrically involves heel, sacroiliac joints, and large joints of the leg. It is usually associated with urethritis, conjunctivitis, iritis, painless buccal ulcers, and keratoderma blennorrhagica.
- **Ankylosing spondylitis:** This involves the spine, although a RA-like symmetrical small-joint polyarthritis may occur in the context of this condition.
- **Hepatitis C :** Hepatitis C may also induce Rheumatoid Factor auto-antibodies.
- **Sarcoidosis, Amyloidosis and Whipple's disease** can also resemble RA.
- **Hemochromatosis** may cause hand joint arthritis.
- **Acute Rheumatic fever** can be differentiated from RA by a migratory pattern of joint involvement and evidence of antecedent streptococcal infection. Bacterial arthritis is usually asymmetric, while RA usually involves both sides of the body symmetrically.

LABORATORY INVESTIGATIONS:

I.BLOOD

1. Complete Blood Count

Haemoglobin	-	Anaemia
Thrombocytes	-	Thrombocytosis
ESR	-	Increased

2. Serum proteins:

Albumin	-	Decreased
Gamma globulin	-	Increased
IgG, IgM, IgA	-	Increased

3.Serological tests:

Rheumatoid Factor:

Rheumatoid factor measures how many of one type of antibodies (IgM, sometimes IgA) binds to a second type of your antibodies (IgG). Initially, only one third of people with RA test positive for the set of antibody called the Rheumatoid Factor (RF).

Most people with Rheumatoid Arthritis will eventually develop this marker and a positive RF is considered a sign and symptom of rheumatoid arthritis. However, some people test positive for rheumatoid factor, yet never develop the disease.

Anti-CCP:

These anti-CCP antibodies bind to some self proteins that are found predominately in the synovial tissue. The citrullinated proteins include filaggrin and its circular form (cyclic citrullinated peptide: CCP). The presence of these antibodies often correlates with some joint destruction. Although this test is relatively recent, a high level of anti-CCP is considered a sign and symptom of Rheumatoid Arthritis.

Inflammation:

Inflammation is your body's response to damage. Your body sends in certain types of white blood cells to pick up debris, fight off infection, promote healing and, if needed, bring in more blood vessels. There is usually a higher state of inflammation in Rheumatoid Arthritis patients and it is a classic sign and symptom of Rheumatoid Arthritis.

Erythrocyte sedimentation rate:

It measures the quantity and how quickly the cells are pelleted by spinning in a centrifuge. Indirectly, it measures how many cells are bigger and thus activated.

C-reactive protein.

A higher than normal level of C-reactive protein (CRP) in the blood also indicates that your body has chronic inflammation, and is a common sign and symptom of Rheumatoid Arthritis.

Radiology:

X-rays

X-rays of all your joints can determine the extent of damage in the joints that are affected. A sequence of X-rays obtained over time can show the progression of RA.

Other investigations:

Urine:

Proteinuria may be due to nephrotic syndrome associated with connective tissue disease.

Synovial fluid:

- White cell count raised in infection.
- Gram stains, culture and sensitivities.
- Crystal identification: Presence of Urate, Calcium pyrophosphate,crystals present.
- Synovial fluid analysis confirms the presence of inflammatory arthritis. Fluid may show positive rose-waaler test in joint fluid, before it can be detected in blood. Also it may show neutrophils or monocytes inclusion bodies.

Biopsy:

- **Synovial biopsy:** Villi formation with thickening of synovial layer and infiltration with abnormal cells.
- **Renal Biopsy:** Indicated in cases of reduced tubular or glomerular function.

Pulmonary Biopsy: Used to distinguish rheumatoid nodules from carcinoma or to establish diagnosis of fibrosing alveolitis.

PHOTOS OF THE DEFORMITIES

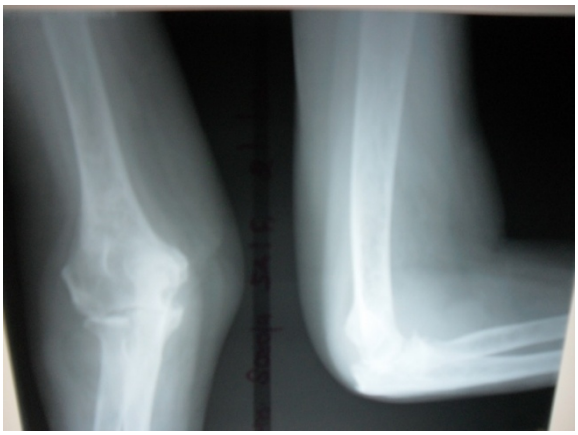
BOUTONNIERE'S DEFORMITY

EXCESSIVE PLANTAR TILT OF META TARSALS

SPINDLE SHAPE DEMORMITY

SWAN NECK DEFORMITY

Z SHAPED DEFORMITY



AFFECTED ELBOW JOINT

PREPARATION AND PROPERTIES OF TRIAL DRUG

PREPARATION OF TRIAL DRUG

அமிர்தரசம்

“கந்தகம் ஓர்பங்கு கிளர்சூதம் ஈர்பங்கு
தந்தவுரிச் சாற்றிலதைத் தானரைத்து - வந்தோட்டில்
வைத்தனலி லேவறுத்து வன்பதத்தி னோடெடுத்து
மெத்தவுந் தூனிச்சாறு விட்டு.”

“விட்டரைத்துக் குன்றியெடை விள்மாத்திரைபிடித்தே
இட்டமுடன் ஒருருண்டை இட்டிடவே - தொட்டசுரம்
சன்னி எழுதோடம் தன்வாதம்போ மிதன்பேர்
எண்ணி லமிர்தரசம் ஏந்து.”

-அகஸ்தியர் மணி4000 என்னும் வைத்திய சிந்தாமணி
வெண்பா4000 இரண்டாம் பாகம் பக்கம் 37-38.

A. INTERNAL MEDICINE**: AMIRTHARASA MATHIRAI**

Ingredients:

- Purified Rasam(Mercury) - 70 gms
- Purified Gandagam (Sulphur) - 35 gms
- Avuri leaf juice (Indigofera tinctoria,Linn.) - Quantity sufficient.

PURIFICATION OF RAW DRUGS:

1. Purification of Rasam (mercury):

35 gms of Mercury is taken, ground with brick powder and turmeric powder consecutively for about 1 hour. Then it is washed with water then mixed with 1.3 liters of Kuppai meni juice (Acalypha indica) and is heated until the juice dries completely.

- Reference: Gunapadam Thadhu Jeeva Vaguppu(Pg No:245)

2. Purification of Ganthagam (Sulphur):

Sulphur is taken in an iron ladle along with cow’s butter and subjected to heat upto melting then it is poured into cow’s milk. This process is repeated for 9 more times. Then the sulphur is taken out and dried to get it in purified form.

- Reference : Gunapadam Thadhu Jeeva Vaguppu(Pg No:305)

METHOD OF PREPARATION:

Purified Mercury and purified Sulphur are ground to fine powder well using Avuri charu, and then taken in a mud plate subjected to heat,which is again ground well using Avuri charu and made into pills (size –kundrimani 130mgs)

(Reference: Agathiyar Mani 4000 ennum Vaithiya Chinthamani Venbaa 4000 part -2 Pg no 37-38)

சுரோணித வாத எண்ணெய்

"எருக்கிலை வேளை நொச்சி யுளியிலை சவுரிக் கொத்து
நருக்கிய நாலிலொன்று கொள வெள்ளாட்டுப் பா
லுருக்குமா மணக்கி னெண்ணெய் ஒன்றுடன் கலந்து காய்ச்சி
சருக்கெனத் தேகத்திற் பூசத் தூரப்போஞ் சுரோணித வாதம்.'

-தேரையர் வாகடம் மூலமும் உரையும் பக்கம் 64-65

B. External Medicine: SURONITHA VATHA ENNAI.

Ingredients:

1.	Erukku leaf (Calotropis gigantean (linn) R.B	-	500gm
2.	Vaelai leaf (Cleome viscose,Linn.)	-	500gm
3.	Notchi leaf (Vitex negundo,Linn.)	-	500gm
4.	Pulli leaf (Tamarindus indica.Linn.)	-	500gm
5.	Savri leaf (Trichosanthes tricuspidata)	-	500gm
6.	Goats milk	-	0.625ml
7.	Castor oil (Ricinus communis,Linn.)	-	0.625ml

Method of Preparation:

All the above said ingredients except goats milk and castor oil is first made into decotion form then mixed with Goats milk and castor oil, subjected to heat and then filtered in thylam form.

- Reference: Theraiyar Vaagadam (Pg 64-65)

PROPERTIES OF THE INGREDIENTS OF TRIAL DRUGS

1. RASAM

English name : Mercury, Quick Silver

Chemical name : Hydrar gyrum

Organoleptic Characters

Taste : Six tastes – dominated by sweet

Potency : Hot and Cold

Actions : Tonic, Vitalizer, Diuretic, Silogogue, Anti inflammatory, Neutralizing pitha.

Types : Rasam, Rasendhiran, Sootham, Misragam, Baaratham.

The Mercury is the chief of all elements. It gives good health, protects the body and cures the diseases that affect the body. Further it facilitates to attain the eight folded siddhis.

General properties:

"விழிநோய் கிரந்திகுன்மம் **மெய்ச்சூலை** புண்குட்
டழிகாலில் விந்துவினால் அத்தை - வழியாய்
புரியு விதி யாது புரியினோ யெல்லாம்
இரியு விதி யாது மில்லை."

-குணபாடம் தாது வகுப்பு.

Proper use of Mercury as medicine cures the diseases of eyes, syphilis, eight types of ulcers (Gunmam) and **Throbbing pain (Soolai)**.

Beneficial properties:

- It purifies blood, it improves blood and sperms.
- Stimulates appetite.
- Kills the micro-organisms and cures the ulcers.
- It cures the diseases of internal and external organs of the body.
- It improves facial complexion.
- It improves memory power, eradicates amnesia.
- It strengthens the nerve plexuses.
- It develops wisdom through concentration of mind.
- It prevents senility and increases the life span.

Special properties:

Mercury has speciality to cure all diseases which is caused by the variation in the Mukkutram.

2. GANDHAGAM

English name : Sulphur

Organoleptic Characters

Taste **:** Bitter and Astringent

Potency **:** Hot and Cold

Pirivu **:** Kaarppu (Pungent)

Actions **:** Laxative,
Tonic,
Antiseptic,
Diaphoretic,
Cholagogue.

Types **:** Pirappu, Vaippu, Nellikkai, Vaana.

Nellikkai Gandhagam is the one which is often used in medicine preparations.

General properties:

"நெல்லிக்காய்க் கந்திக்கு நீள்பதிணென் குட்ட மந்தம்
வல்லை கவிசைகுன்ம வாயுகண்ணோய் - பொல்லா
விடக்கடி வன் மேகநோய் **வீறுசுரம்** பேதி
திடக்கிரக ணீகபம்போந் தேர்."

-குணபாடம் தாது வகுப்பு.

It is useful in the treatment of 18 types of Skin Diseases, Liver Enlargement, Abdominal Distention, Eye Diseases, Chronic Venereal Diseases, Chronic Diarrhoea, Gastric Ulcer, Poisonous Bites, **Fever due to Vatham** and Chronic Dysentery.

Special properties

Sulphur as an internal medicine heals the diseases effectively in a way similar to that of mother's care.

3. AVURI

English name : Indian Indigo plant

Botanical name : Indigofera tinctoria

Family **:** Fabaceae

Parts used **:** Whole plant

Organoleptic Characters

Taste	:	Kaippu
Potency	:	Veppam
Pirivu	:	Kaarppu

Therapeutic actions

Germicide,
Antiperiodic,
Stimulant.

Therapeutic effects

"உரியலவு ரித்தழைத்தான் ஓது பதினெண்
அரியநஞ்சைத் தின்றவர்க்கும் ஆகும் - தெரிவரிய
வாதவெப்பு காமாலை மைந்தர் குறுமாந்தஞ்
சீதம் அகற்றுந் தெரி."

"சன்னி பதிமூன்றுஞ் சந்தொடித்த **வாதமுதல்**
உன்னு விடக்கடியும் ஓடுங்காண் - மின்னுங்
கவுரிநிறம் உண்டாகும் காசினியுள் நல்ல
அவுரியிலை தன்னால் அறி."

-அகத்தியர் குணவாகடம்

Avuri leaf decoction cures, 18 types of toxins, fever, jaundice and **Vatham**.

4.ERUKKU

English name	:	Mudar, Gigantic swallow wort
Botanical name	:	Calotropis gigantes (Linn) R.Br.
Family	:	Asclepiadaceae
Parts used	:	Leaf

Organoleptic Characters

Taste	:	Kaippu, Kaarppu, Inippu
Potency	:	Veppam
Pirivu	:	Kaarppu

Therapeutic actions

Anthelmintic,
Alterative,
Laxative.

Therapeutic effects

"எலிவிடங் குட்டமைய மேறு கிருமி
வலிசூலை வாயுவிட மந்தம் - மலபந்தம்
எல்லா மகலு மெருக்கிலை யைக்கண்டால்
வில்லார் நுதலே! விளம்பு."

-அகத்தியர் குணவாகடம்

Its leaves cures Rat poison, snake poison, **Joint pain** and **Vatham.**

5. VELAI

English name : Dog mustard

Botanical name : Cleome viscosa.Linn.

Family : Cleomaceae

Parts used : Leaf

Organoleptic Characters

Taste : Kaarppu

Potency : Veppam

Pirivu : Kaarppu

Therapeutic actions

Rubefacient,
Antispasmodic,
Carminative,
Diaphoretic.

Therapeutic effects

"சிரநோய் **வலிகுடைச்சல்** தீராச் சயித்தியம்
உரநோ யிவைக ளொழியும் - உரமேவும்
வில்வேளைக் காயும் விழியாய்! பசிகொடுக்கும்
நல்வேளை தன்னை நவில்."

"நல்லவே ளைப்பூண்டை நாடுங்கால் **வாதமும்போம்**
சொல்லுமை யத்துடனே சோபையறும் - மெல்லமெல்ல
தக்க வன லும்பித்துந் தானெழும்புஞ்சாந்தமின்றி
அக்கரநோய் மிஞ்சு மறி."

-அகத்தியர் குணவாகடம்

It cures Head ache, **Body pain**, stabbing pain, chest pain and **reducing Vatham.**

6. NOTCHI

English name : Five leaved chaste tree

Botanical name : Vitex negundo.Linn.

Family **:** Verbenaceae

Parts used **:** Leaf

Organoleptic Characters

Taste : Kaippu,Thuvarppu, Kaarppu.

Potency : Veppam

Pirivu : Kaarppu

Therapeutic actions

Alterative,

Vermifuge,

Astringent,

Refrigerant.

Therapeutic effects

"நோயா கலியை நொடிக்கு ளருந்தவெம்மை
யோயா மணாளு முயர்த்துதலுக் - காய
வந்தமுதல் நண்பாகி **<u>வாதத்தை</u>** யேயுறவாற்
சிந்துவா ரங்கனலுந் தீ."

-தேரன் வெண்பா

It reduces the Vatha kutram, **Body pain, Joints pain** and **Swelling due to vatham**.

7. PULI ELAI

English name : Tamarind tree

Botanical name : Tamarindus indica.Linn.

Family **:** Caesalpiniaceae

Parts used **:** Leaf

Organoleptic Characters

Taste : Pullipu

Potency : Veppam

Pirivu : Kaarppu

Therapeutic actions

Laxative,

Stimulant,

Refrigerant.

Therapeutic effects

"தீதில் பழம்புளியைச் சேர்க்கத் திரிதோடம்
வாதமொடு சூலைகபம் மாறுங்காண் - ஓதுசுரஞ்
சர்த்தியென்ற தோடமிவை சாந்தமாங் கண்ணோய்போம்
பித்தமென்ற பேரொழியும் பேசு."

-அகத்தியர் குணவாகடம்.

It cures **Vatha diseases**, Mukkutram, Vomiting, Eye diseases and Fever.

By using leaf as a external application it reduces **swelling due to vatham** and also reduces **pain**.

8.SAVURI

English name : Kurattai

Botanical name : Trichosanthes bracteata (Lam)

Family : Cucurbitaceae

Parts used : Leaf

Organoleptic Characters

Taste : Kaippu

Potency : Veppam

Pirivu : Kaarppu

Therapeutic actions

Hydragogue,

Cathartic,

Counter irritant.

Therapeutic effects

"தலைவலி**கு டைச்சல்** சலப்பீன சங்கள்
குலைகுலைந்து காட்டிற் குடிபோம் -நிலைவா
னவரிப் படிமாதென் றையுறுமெய்ம் மாதே!
சவரிப் பழத்தாள் சளைந்து."

9.GOATS MILK

Therapeutic effects

"வெள்ளாட்டு பாலுக்கு மேவியநற் றீபனமாந்
தள்ளாடு **வாதபித்தஞ்** சாந்தமாம் - உள்ளிரைப்புச்
சேதமதி சாரஞ் சிலேதுமம் அறும் புண்ணாறூம்
வாத சிலேதுமம் முப்போ மாய்ந்து".

-குணபாடம் சீவ வகுப்பு

Goats milk cures vathapitha diseases, bronchial asthma, dysentery, kabam diseases, ulcers, and it reducing **Swelling due to vatham**.

10.CASTOR OIL

English name : Caster oil

Botanical name : Ricinus communis Linn.

Family **:** Euphorbiaceae

Parts used **:** Leaf

Organoleptic Characters

Taste : Kaippu

Potency : Veppam

Pirivu : Kaarppu

Therapeutic Action:

Anti vatha,

Galactagogue.

Therapeutic effects

“ஆமணக் கெண்ணெய் தன்னை யணிநில மறியக் கேண்மின்
பூமணச் சந்து தோறும் பொருந்திய **வாதம் போக்கும்**
தீமந்தத் தானும் போக்குந் திகழ்வுடன் விரைவு முண்டாம்
தீமனக் குடலில் வாதஞ் சேர்குட லேற்றம் போமே. "

-குணபாட மூலிகை வகுப்பு

This oil reduces the all **major and minor joint pain, vatham** and abdominal discomfort due to the variations in vatham.

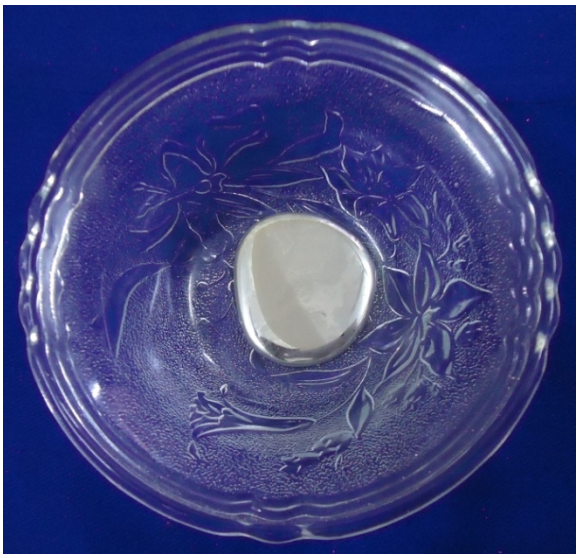
By having purgative action it reduces the constipation, vatham and flatulence.

Chemical constituents

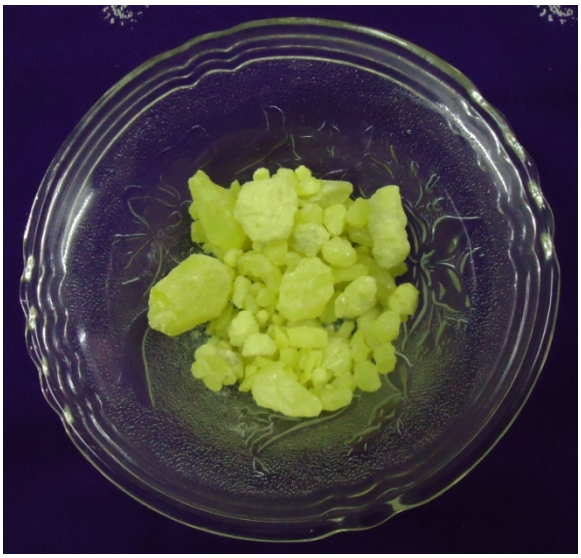
- Ricinus communis Seeds contain fixed oil 45 -52 %.
- The oil chiefly consists of ricinoleate glycerol or tri – ricinoleate of glycerol or tri-ricinolein, with a small quantity of palmitin, stearin.
- The glycerides of ricinoleic acid are mainly responsible for the purgative effect.

INGREDIENTS OF INTERNAL MEDICINE

RASAM



GANTHAGAM



AVURI

PREPARATION OF

AMIRTHARASA MATHIRAI

INGREDIENTS OF EXTERNAL MEDICINE

ERUKKU

VELAI

NOTCHI

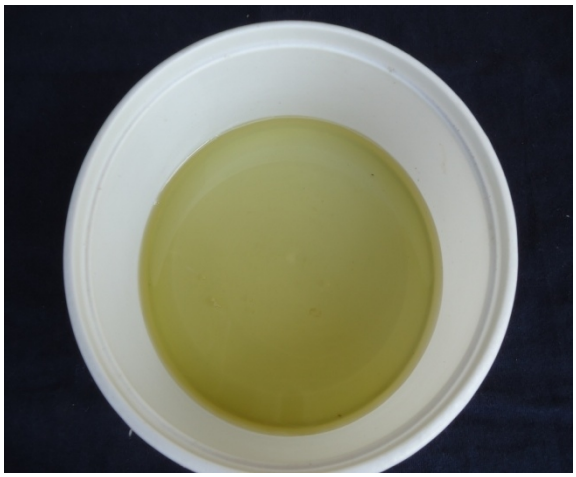
PULI ELAI

SAVRI

INGREDIENTS OF EXTERNAL MEDICINE

GOATS MILK

CASTOR OIL



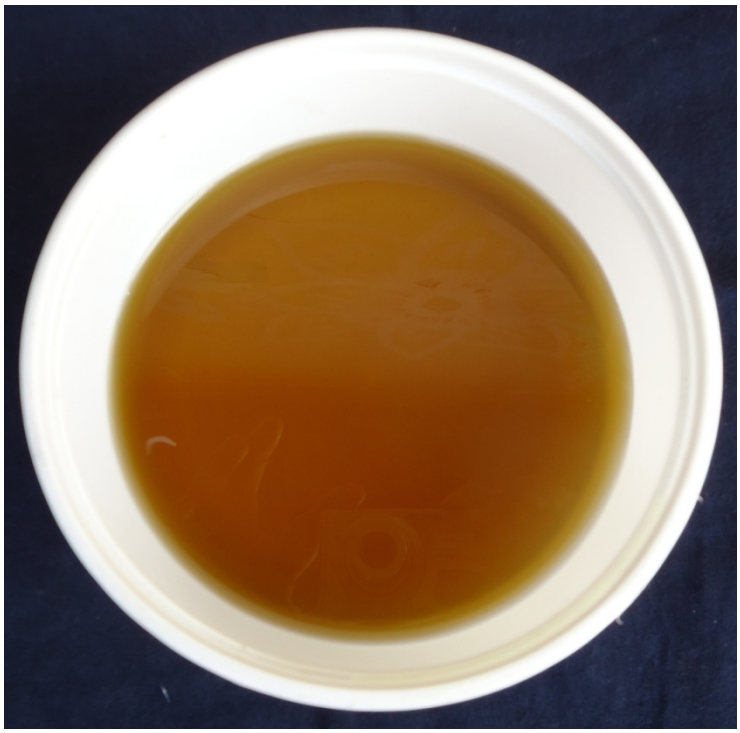
PREPARATION OF DECOTION FOR SURONITHAVATHA ENNAI

PREPARATION OF SURONITHAVATHA ENNAI

TRIAL DRUGS

AMIRTHARASA MATHIRAI

SURONITHA VATHA ENNAI



VARMAM

Varmam is a art of defence. The changes occurring in the body on being hit at some specific points on the body indirectly with a particular force is known as varmam.

The changes occurring in the body vary with the force of hitting, time or duration and the physical strength of the victim.

The points where life force resides and flows in the human body are known as varmam. Varmam also means the points where breathing energy resides in the body.

-Vaagada Nithaanam Verse- 31

"வாசி தட்டும் தலமெல்லாம் வர்மம்."

- Varma Odivu Murivu Sara Soothiram-1200

Varmam can be defined as the flow of life force in relationship with breathing.

"செப்புறு தசைகளென்பு சிறு பெரு நரம்புசந்து
தப்புறு நாடியாறும் தங்குமிடம் வன்மமாமே."

-Varma Vidhi

The vital points (varmams) are located in the junction of nerves, joints, bones, muscles, ligaments and internal organs.

Synonyms of the varmam

The equivalent terms denoting varmam are Kaalam, Adakkam, Marmam, Sutcham, Vanmam, Emam, Idu,Vaasi,Puravi,Uyir etc,

HISTORY OF VARMAM:

"தேறவே சிவன் உமைக்குச் சொன்ன போதம்
ஆறாமல் நான் அறிந்து இந்நூல் சொன்னேன்."

- Varma Odivu Murivu Sara Soothiram-1500, Song-833

Lord Siva taught varmam to his wife Paarvathi; later Paarvathi taught varmam to their son Lord Murugan. Lord Murugan then taught to the Siddhar Agasthiyar. Agasthiyar later gave a written form that reached the people.

CLASSIFICATION OF VARMAM DEAL BY VARIOUS TEXTS:

There are 108 varmam or varma points in our body.

1. According to the text Varma Odivu Murivu Soothiram,

1. Padu varmam - 12
2. Thodu varmam - 96

Paduvarmam (12) which are injured, can lead to death. The other 96 are Thoduvarmam which are used in therapeutic purposes.

3. According to the text Varma Soothiram,

Vatha varmam	-	64
Pittha varmam	-	24
Kaba varmam	-	06
Ul varmam	-	06
Thattu varmam	-	08
Total	-	108

The main causes for impact to nerve centre (Varmam)

"கேளப்பா தடியடிகள் படுத லாலும்
கெடியான எறிவிசைகள் கொள்ள லாலும்
வாளப்பா கட்டைகுற்றி தட்ட லாலும்
மாற்றானின் கைப்பிடிகள் படுதலாலும்
வேளப்பா ஆகசா மதிலே நின்று
மெய்மறந்து கைமறந்து விழுத லாலும்
தாளப்பா பற்பலவாம் விதத்தி னாலே
சங்கையில்லாக் காலமது சாருந் தானே."

-Odivu Murivu Saari-1200

- Hit sustained by a thick and rough stick.
- Stone thrown at a high speed from a sling.
- Fall from a tree or height.
- Fall while running.
- By leaping.
- By fainting.

Varmam treatment

Varmam therapy is a systematic study of vital points (varmam) on human body and also on animal bodies.

"உள்ளபடி நூற்றெட்டு தலம் சாவாகும்
உணர்வாகி அத்தலங்கள் உயிரு மாகும்
கள்ளமுற்ற அத்தலங்கள் பிணியு மாகும்
களங்கமற்றால் அத்தலங்கள் சுகமே காணும்

உள்ளுணர்வாய் அத்தலங்கள் வாசி யேற்ற
உற்றதினால் அத்தலங்கள் உறுதி சேரும்
புள்ளடிபோல் அத்தலங்கள் கண்ட வர்கள்
புகலார்கள் எல்லோரும் புவியினுள் ளோர்க்கே."

-Varma Odivu Murivu Sara Soothiram-1200

It is also called the art of killing and the art of healing. Right or wrong vibration of the vital points will either promote or impair health and aim is to produce healthy and stable individuals.

Varmam treatment is connected with medicines, yoga, therapeutic massage, astrology, psychology, sociology, martial Arts etc.

The 40 cases of the Uthiravatha Suronitham were diagnosed clinically and 20 cases of them were admitted in Ayothidoss Pandithar Hospital attached to National Institute of Siddha. Among them 10 Inpatients were treated by Varmam treatment along with the trial drugs. The remaining 10 Inpatients received only trial medicines.

Varmam points manipulated in Uthiravatha Suronitham patients once a day.

1.Mudichi

2.Kavuli

3.Chavvu

4.Mozhi piralgai

5.Komberi

6.Viruthi

7.Ullangal velli

8.Ullangai vellai

1. MUDICHU VARMAM

Synonyms:

- Pinmudichu varmam
- Kabalamudichu varmam (Thodu varma nithanam)
- Pinsuvathi varmam (Varma nithanam)

Location:

"பிடறியின் மேல் நாலிறையில் முடிச்சு வர்மம்".

- **வர்ம சாரி 205**

"கேளடா பிறந்தலையில் பொருத்தில் தானே
கிருபையுடன் பின் சுவாதி என்றதற்குப் பேராம்".

- **வர்ம நிதானம்.**

Muduchi:

It is located in nape at the bony prominence of cervical region.

2. KAVULI KAALAM

Synonyms:

- Chipiram (Varma vidhi)
- Kavuli kaalam (Varma suthiram 101)

Location:

"விட்ட கையினிடை கவளி மூனும் காணே".

- **வர்ம திறவுகோல் 225**

"கற்பமென்ன கையிடையில் கவளிகாலம்".

- **வர்ம சூத்திரம் 101**

"கொண்டதொர் பெருவிரலுக்கு கீழிலே கவளியென்றும்
கண்டிடா நடுவிரலுக்கும் கீழே இருவகை தான்".

- **வர்ம லாட சூத்திரம் 300**.

Kavuli varam:

It is located above the web space of fingers. For ceganavatham pressure is applied in kavuli between thumb and index finger.

3. CHAVU VARMAM

Synonyms:

- Paadhaipu varmam (Varma noolalavu nool)
- Sanni varmam (Varma nithanam 300)

Location:

"முட்டு சிரட்டை சுற்றளவெடுத்து (சுமார் 18 விரலளவு) முன்றாக மடக்கி (சுமார் 6 விரலளவு) முட்டு சிரட்டையிலிருந்து இரு பக்கவாட்டிலும் அளக்க வலது புறமும் இடது புறமும் பதைப்பு வர்மம் அறியலாம்"

- வர்ம நூலளவு நூல்.

Chavu:

It is located in medial aspect of arm just below the shoulder.

4. MOZHI PIRALGAI:

Synonyms:

- Mozhi varmam (varma beerangi 100)
- Mozhi pooruthu varmam (varma noolalavu nool)
- Singara manikattu kaalam (sathuramani suthiram)

Location:

"வாரமுறு கரமதிலே ழங்குலத்தில்
மொழி பிறங்கண் தெட்சணையின் காலமென்பர்"

- வர்ம பீரங்கி 100

"வாரான கரமதிலே ஏழும் தானும்
வாழ்த்துகிறோம் மொழி பிறகண்தெட்சணை"

- **வர்ம் கண்ணாடி 500**

"சொர்ண தெச்சணைக் காலத்துக்கு நடுவே
சிங்காட மணிகட்டு காலம் இது தொடுவர்மம்"

- **வர்ம விரலளவு நூல்**

Mozhi Piralgai

It is located in the web space at the junction of thumb and Index finger.

5.KOMBERI VARMAM

Synonyms:

Thumbikaala varmam - Varma Noolavu Nool

Komberi varmam - Varma Soothiram

Location:

“குதிரைமுக வர்மத்திலிருந்து (5 விரலுக்கு) கீழ்நோக்கி
அளக்க தும்பிக்கால வர்மம் அறியலாம்.”

-Varma Noolalavu Nool

“.....குதிரை முகவர்மம்
கண்டாயே அங்குலந்தான் நாலின் கீழே

கடந்திட்டால் கொம்பேறி வர்மமாகும்
ஏகும் முடவு இறைரண்டில் தும்பிகாலம்."

-Adi Varma Sootcham-500

"காலிலே குதிரைமுகக் காலத்தின் கீழ் அங்குலம்
நாலிலே நவிலுவோம் கொம்பெறி வர்மத்தின் தானம்."

-Varma Laada Soothiram-300

Komberi varmam is located 5 fingers below from the Kuthirai Mugha Varmam point (the middle of the both legs) in the anterior aspect of both legs.

Sign and symptoms:

Damage to Komberi Varmam leads to sweating, features mimicking tetanus and tiredness will set in.

Uses:

It reduces the back pain.

-Practical guidance given by Thiru.Shanmugam Aasaan

6. VIRUTTHI VARMAM

Synonyms:

Virdhi varmam - Varma Kannaadi 500
Virtthi varmam - Adi Varma Soothiram
Viruthi varmam - Varma Laada Soothiram 300

Location:

"நவிலுகின்ற பெருவிரலிறைக்கு மேலாம்
ஒன்றான விற்தி என்ற காலமாகும்
உரையதின் மேல் ரண்டிறைக்குள் சுண்டோதரி....."

-Varma Kannaadi-500

"போமென்ற பெருவிரல் மொழி மேல் விர்த்திகாலம்."

- Adi Varma Sootcham-500

"வெல்லுவார் பெருவிரலுக்கு மேலிறை ஒன்றில் விருத்தி."

- Varma Laada Soothiram-300

Finger breadth below the nerukku varmam (5 fingers above from the tip of each toes) of great toe or placed at the interphalangeal joint of great toe**.** Virutthi varmam is located 2.5 cms, above the tip of the big toe.

Symptoms:

Damage to Viruthi kaalam causes Delirium, Swelling of legs, Faint.

Uses:

Strengthen the legs, used in emergency treatment.

7. ULLANKAI VELLAI VARMAM

Synonyms:

Vellai varmam	- Varma Kannadi-500
Adi kuzhi	- Varma Vidhi
Munnoli varmam	- Varma Soothiram Panjikarana Pinnal
Karunasakkira kaalam	- Varma Aani
Kunju pichathi kaalam	- Varma Vilakkam

Location:

"தீரமுறும் நடுகை அகமே வெள்ளை வர்மம்"

-Adi Varma Sootcham 50

"தேரான உள்ளங்கை வெள்ளை வர்மம்"

-Varma Kannadi 500

“காலமென்ற உள்ளங்கை நடுவில்தானே
கடினமதாம் கருணசக்கிர காலம் பாரு."

-Varma Aani 100

It is located in the Centre of the palm.

Sign and symptoms:

Body pain, dull vision, fever, swelling and restriction in upper limbs.

Uses:

Strengthen the hip region, increases the memory power.

8. ULLANKAAL VELLAI VARMAM

Synonyms

Adangal varmam	- Varma Soothiram 1200
Kaal vellai varmam	- Adivarma Sootcham 500
Allankaal varmam	- Varma Viralalavu Nool
Adikkuzhi varmam	- Varma Vidhi
Vellai varmam	- Varma Odivu Murivu Sara Soothiram

Location:

"கீர்த்தியாம் பாதமதில் வெள்ளை வர்மம்."

- Varma Odivu Murivu Sara Soothiram -1200

"சூட்சமடா வெள்ளையதில் அடங்கல் வர்மம்."

- Varma Soothiram- 101

"படைமுறித்தான் வர்மத்துக்கு இரண்டு விரலுக்குக்
கீழே உள்ளங்கால் வர்மம் ....."

-Varma Noolalavu Nool

"அவனிதனில் உள்ளங்கால் வெள்ளை வர்மம்."

- Varma Peerangi-100

"அகமான உள்ளம் கால் வெள்ளை வர்மம்."

-Adi Varma Sootcham-500

In the centre of the plantar region.

Symptoms:

Fainting then death occurs.

Retrieval techniques:

Massaging with medicated oil and taking head bath with oil cures eye diseases.

Uses:

It cures giddiness, vomiting, faint, hysteria, convulsions and delirium.

MATERIALS AND METHODS

The Study on Uthiravatha Suronitham was carried out in the OPD and IPD of the Sirappu Maruthuvam,National Instiute of Siddha.

According to the Agasthiyar Mani 4000 Ennum Vaithiya Chinthamani Venbaa 4000 Part -2 Pg no 37-38) and Theraiyar Vaagadam (Pg 64-65)], **Amirtharasa Mathirai** (Internal) **and Suronitha Vatha Ennai** (External) are the preparation indicated for Uthiravatha Suronitham.

STUDY DESIGN:

A Pilot clinical trial

STUDY PLACE:

Ayothidoss Pandithar Hospital, National Institute of Siddha, Chennai-47.

STUDY PERIOD:

12 months

SAMPLE SIZE:

Totally 40 patients (20 OP + 20 IP). 10 IP Patients were treated with Varmam therapy along with internal and external medicines and 10 IP and 20 OP patients were treated with internal and external medicines only.

TREATMENT:

INTERNAL MEDICINE:

Drug: Amirtharasa Mathirai

(Ref: Agathiyar Mani 4000 Ennum Vaithiya Chinthamani Venbaa 4000 Part -2 Pg No 37-38)

Dosage : 130 mgs (twice a day)

Duration: 48 days.

EXTERNAL MEDICINE:

Drug: Suronitha Vatha Ennai.

[Ref: Theraiyar Vaagadam (Pg No 64-65)]

Usage: External use.

STANDARD OPERATING PROCEDURE:

Source of raw drugs:

The required raw drugs for preparation of "**Amirtharasa Mathirai (Internal)" and "Suronitha vatha ennai" (Ext.**) were purchased from a well reputed country shop and the

purchased drugs were authenticated by the H.O.D of the Medicinal botany at National Institute of Siddha and Chemistry department from CRI at Arumbakkam.

PURIFICATION OF RAW DRUGS

1. Purification of Rasam (Mercury)

35 grams of Mercury was taken, grounded with brick powder and turmeric powder consecutively for about 1 hour and washed with water then mixed with 1.3 liters of Kuppai meni juice (Acalypha indica) and was heated until the juice dried completely.

Reference: Gunapadam Thadhu Jeeva Vaguppu(Pg No:245)

2. Purification of Ganthagam (Sulphur)

Sulphur was taken in an iron ladle along with cow's butter and subjected to heat upto melting then it was poured into cow's milk. This process was repeated for 9 more times. Then the sulphur was took out and dried to got it in purified form.

- Reference : Gunapadam Thadhu Jeeva Vaguppu(Pg No:305)

METHOD OF PREPARATION

A. Internal Medicine: AMIRTHARASA MATHIRAI

Ingredients:

- Purified Rasam (Mercury) - 70 grams
- Purified Gandagam (Sulphur) - 35 grams
- Avuri leaf juice (Indigofera tinctoria,Linn.) - Quantity sufficient.

Purified Mercury and purified Sulphur were grounded to fine powder well by using Avuri charu, and then took in a mud plate subjected to heat,which was again grounded well by using Avuri chru and made into pills (size –kundrimani 130mgs)

(Reference: Agathiyar Mani 4000 ennum Vaithiya Chinthamani Venbaa 4000 part -2 Pg No 37-38)

B. External Medicine: SURONITHA VATHA ENNAI

Ingredients:

1. Erukku leaf (Calotropis gigantean (linn) R.B) - 500grams
2. Velai leaf (Cleome viscose. Linn. - 500grams
3. Notchi leaf (Vitex negundo. Linn.) - 500grams
4. Puli leaf (Tamarindus indica.Linn.) - 500grams
5. Savuri leaf (Trichosanthes tricuspidata) - 500grams

6. Goat's milk - 0.625ml
7. Castor oil (Ricinus communis. Linn.) - 0.625ml

Method of Preparation:

All the above said ingredients except goats milk and castor oil were first made into decotion form then mixed with Goats milk and castor oil, subjected to heat and then filtered in thylam form.

- Reference: Theraiyar Vaagadam (Pg 64-65)

Drug Storage:

The Amirtharasa mathirai was stored in clean and dry glass bottles and Suronitha vatha ennai was stored in clean and dry narrow mouthed bottles.

Dispensing:

The internal medicine was distributed in pills form. External oil was distributed in Disposable pet bottles.

VARMAM POINTS APPLIED TO THE PATIENTS

1. Mudichu
2. Kavuli
3. Chavvu
4. Mozhi piralgai
5. Komberi
6. Viruthi
7. Ullangal vellai
8. Ullangai vellai

The above points were stimulated for the selected patients.

SUBJECT SELECTION

Patients reporting to NIS were subjected to screening by screening Proforma. After screening they were enrolled for the study fulfilling the inclusion criteria as said below.

Inclusion Criteria

- Age: 20- 60 years.
- Sex: Both male and female.
- Symmetrical joint involvement.
- Arthritis of three or more joints.
- Rheumatoid factor positive or negative.

- Morning stiffness.
- Deformities like Swan neck deformity and Button hole deformity.
- Swelling especially in the inter-phalangeal joint.
- Patients willing for admission and stay in IPD or willing to attend OPD.
- Patient willing to undergo Radiological investigation and for laboratory investigation.
- Patient willing to sign the informed consent stating that he/she was consciously stick to the treatment during 48 days but could OPD out of the trial of his/her own conscious discretion.

Exclusion Criteria

- Drug addicts
- Pregnancy and lactation
- Tubercular arthritis
- Any other serious systemic illness
- Osteoarthritis
- Psoriatic arthritis
- Gouty arthritis
- HIV & AIDS

Withdrawal Criteria

- Intolerance to the drug and development of adverse reactions during drug trial.
- Poor patient compliance and defaulters.
- Patient turning unwilling to continue in the course of clinical trial.

TESTS AND ASSESMENTS

A. Clinical assessment
B. Siddha investigation
C. Laboratory investigations
D. Radiological investigation

A. CLINICAL ASSESMENT

- ❖ Arthritis involving three or more joints
- ❖ Symmetrical joint involvement
- ❖ Morning stiffness
- ❖ Anorexia
- ❖ Spindle shaped appearance of fingers

- ❖ Rheumatoid nodules
- ❖ Depression
- ❖ Swelling of small joints of hands and foot.
- ❖ Swan neck deformity
- ❖ Button hole deformity

B. SIDDHA SYSTEM EXAMINATION

1. Naadi
2. Sparisam
3. Naa
4. Niram
5. Mozhi
6. Vizhi
7. Malam
8. Moothiram

C. ROUTINE INVESTIGATIONS

BLOOD

Hb

Total WBC Count

DC- Polymorphs

- Lymphocytes
- Eosinophils
- Monocytes
- Basophils

Total RBC count

ESR

½ Hr: 1 Hr:

Blood sugar

Fasting: PP:

Serum cholesterol

URINE

Albumin

Sugar (F) (PP)

Deposits

Renal function tests

Urea

Creatinine

Liver function tests

Serum Total bilirubin

Direct bilirubin

Indirect bilirubin

Serum Alkaline phosphatases

SGOT

SGPT

C. SPECIFIC INVESTIGATIONS

CRP

RA factor

ASO titre

RADIOLOGICAL INVESTIGATIONS

X- Ray of affected joints (AP and Lat view)

DATA COLLECTION FORMS:

Required information were collected from each patient by using following forms.

FORMS

FORM I : Screening and Selection Proforma

FORM II : History Taking Proforma

FORM lll : Clinical Assessment Proforma

FORM lV : Laboratory Investigations Proforma

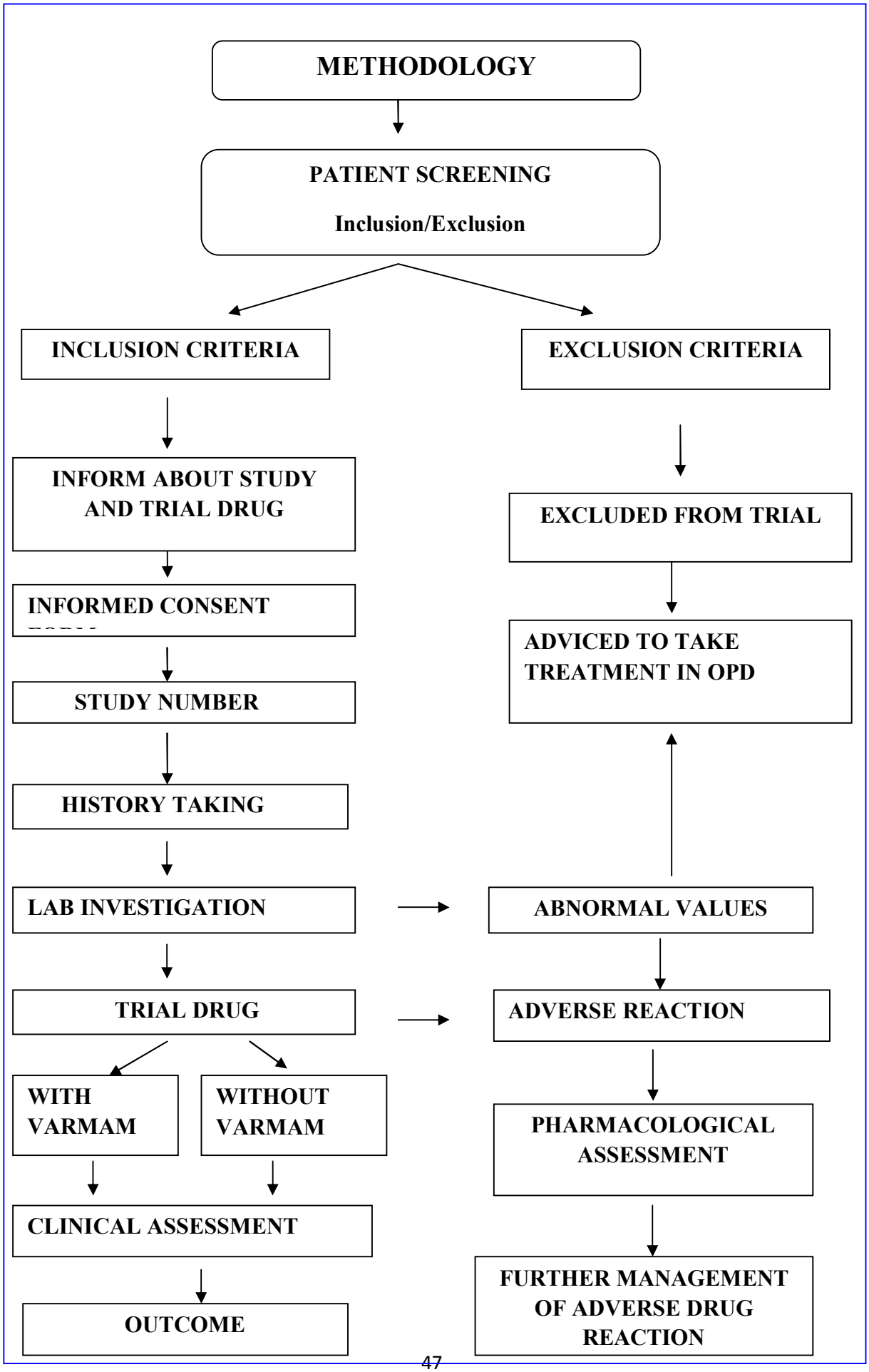
FORM V : Informed Consent Form

FORM VI : Withdrawal Form

FORM VII : Adverse Reaction Report Form

FORM VIII : Patient Information Sheet

FORM IX : Dietary Advice Form


METHODOLOGY
PATIENT SCREENING
Inclusion/Exclusion
INCLUSION CRITERIA
EXCLUSION CRITERIA
INFORM ABOUT STUDY AND TRIAL DRUG
EXCLUDED FROM TRIAL
INFORMED CONSENT
ADVICED TO TAKE TREATMENT IN OPD
STUDY NUMBER
HISTORY TAKING
LAB INVESTIGATION
ABNORMAL VALUES
TRIAL DRUG
ADVERSE REACTION
WITH VARMAM
WITHOUT VARMAM
PHARMACOLOGICAL ASSESSMENT
CLINICAL ASSESSMENT
FURTHER MANAGEMENT OF ADVERSE DRUG REACTION
OUTCOME

STUDY ENROLLMENT

Patients reporting at the OPD of NIS with the clinical symptoms of Uthira Vatha Suronitham were examined clinically. Based on the inclusion and exclusion criteria, they were enrolled for the study.

The patients who were enrolled were informed about the study, trial drug, possible outcomes and the objectives of the study in their vernacular language. After ascertaining the patient's willingness, informed consent were obtained in written form.

All those patients were gave unique registration card in which patients Registration number of the study, Address, Phone number and Doctors phone number etc for their easy communications.

Complete clinical history, complaints and duration, examination findings and laboratory findings were recorded in the prescribed Proformas. Patients were advised to took the trial drug and appropriate dietary advice.

CONDUCT OF THE STUDY:

Purgation with Agasthiyar Kuzhambu - 130 mgs early morning with Ginger juice gave for balancing the deranged mukkutram on the first day of the treatment.

(Ref: Siddha formulary of India. Part- I)

The next day onwards the trial drug Amirtharasa Mathirai (Internal) and Suronitha Vatha Ennai (External) were gave for 48 days. OPD patients were asked to visit the hospital once in 7 days. At each clinical visit clinical assessment was made and prognosis were noted. For IPD patients the clinical assessment were made daily in the Ward. 10 patients in IP ward were treaed by Varmam therapy along with the trial medicines. The results were compared at the end of the study. Laboratory investigations and radiological investigation were made on the first day and 48^{th} day of the trial. At the end of the treatment, the patients were advised to visit the OPD for follow-up for futher 2 months for observing any recurrence. Defaulters were not allowed to continue and were withdrawn from the study.

DATA ANALYSIS:

After enrolling the patient in the study, a separate file were maintained for each and every patient and all forms and other information were kept in the file. The screening forms were filled separately. The data entry were monitored by the Head of the department and faculties of the concerned department. All collected datas were statistically analysed by

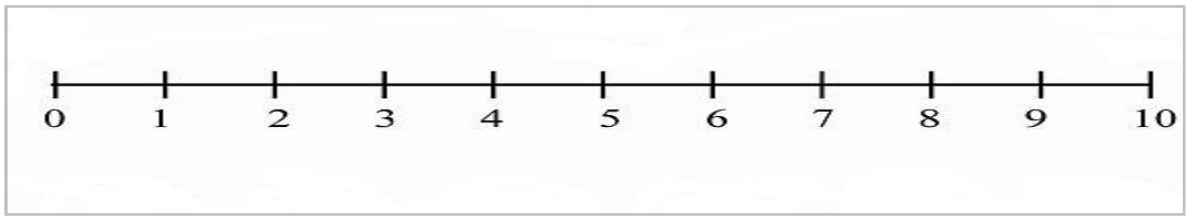
Senior Research Officer (Statistics) for logical errors and incompleteness of data to avoid any bias. No modification in the results was permitted for unbiased reports. Then final reports were generated.

OUTCOME

Assessment of pain was made by Universal pain assessment scale. Other clinical signs and symptoms were assessed by Gradation method.

Laboratory investigations were made at the end of the study.

UNIVERSAL PAIN ASSESMENT SCALE:



Grade 0 : No Pain

Grade 1 -3 : Mild pain

Grade 4-6 : Moderate pain

Grade 7-10 : Severe pain

- Ref: Clinical Manual for Nursing Practise.(National Institute of Health Warren Grant Magnuson Clinical Center)

Restricted movements is assessed by the following Gradation,

Grade 1 – Able to perform normal duties

Grade II – Moderate Restriction – Self care is possible

Grade III – Marked restriction – Limited self care/some assistance required.

Grade IV – Confined to bed or wheel chair

ADVERSE EFFECTS/ SERIOUS EFFECTS MANAGEMENT:

If the trial patient developed any adverse reaction, he/she was immediately informed to the Pharmaco-vigilance committee of NIS for further management.

ETHICAL ISSUES

1. To prevent any infection, while collecting blood sample from the patient, only disposable syringes, disposable gloves, with proper sterilization of lab equipments were used.

2. The patient were informed about the treatment and other procedures in his/her vernacular language. After received written consent only (language understandable to the patient) they were enrolled in the study.
3. No other external or internal medicines were used, other than the trial drug during the trial period. There was no infringement on the rights of the patient.
4. The data collected from the patient were kept confidential.
5. Treatment were provided free of cost.
6. If any serious adverse reactions occur during trial, the patients were gave alternative treatment at regular OPD of National Institute of Siddha.
7. If the patient was not willing to continue the treatment, he/she was allowed to withdraw from the trial at any time.

OBSERVATIONS AND RESULTS

Results of the study were observed with respect to the following criteria

1. Gender distribution

2. Age distribution

3. Socio-economic status

4. Occupational distribution

5. Diet

6. Thinai

7. Paruva Kaalam (Season)

8. Gunam

9. Body constitution

10.Naadi

11.Disturbances in Vali

12.Disturbances in Azhal

13.Disturbances in Iyam

14.Envagai thervugal

15.Neikkuri

16.Udal Thaathukkal

17.Kanmenthiriyam

18.Duration of Illness

19.Mode of onset

20.Clinical features

21.Deformities

22.Involvement of joints

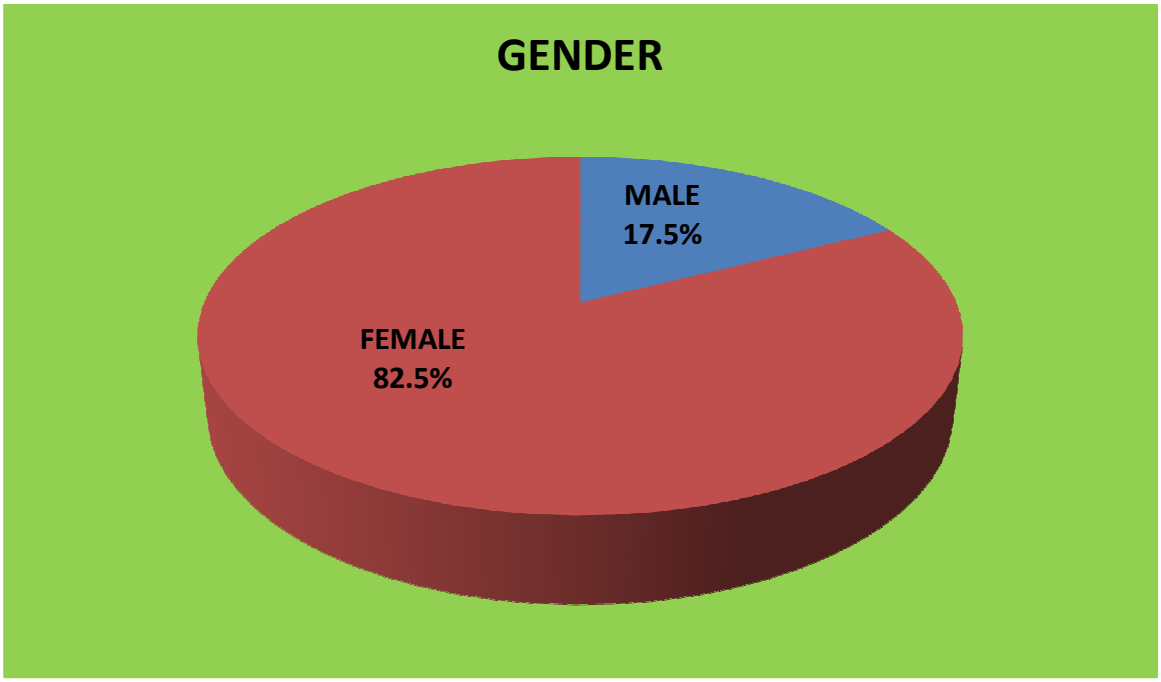
23.Results after treatment

- **A.Reduction of pain**
- **B.Functional ability gradation**
- **C.Overall result after treatment**

OBSERVATIONS AND RESULTS

1. Gender distribution

GENDER	NUMBER OF PATIENTS	PERCENTAGE %
Male	7	17 .5%
Female	33	82.5%
Total	40	100%

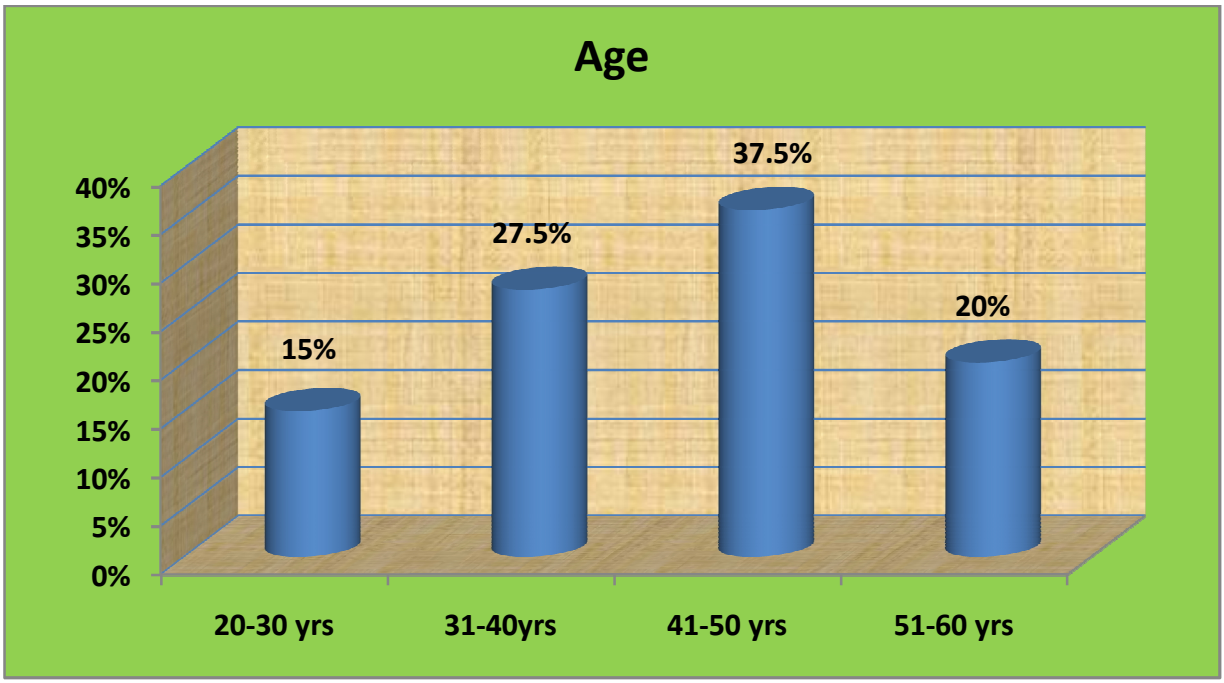


Observation:

Among the 40 patients selected, the disease (R.A) was found to be higher in females (82.5%) and lower in males (17.5%).

2. Age distribution

AGE (YEARS)	NUMBER OF PATIENTS	PERCENTAGE %
20 - 30 yrs	6	15%
31 – 40 yrs	11	27.5%
41 – 50 yrs	15	37.5%
51 – 60 yrs	8	20%
Total	40	100%

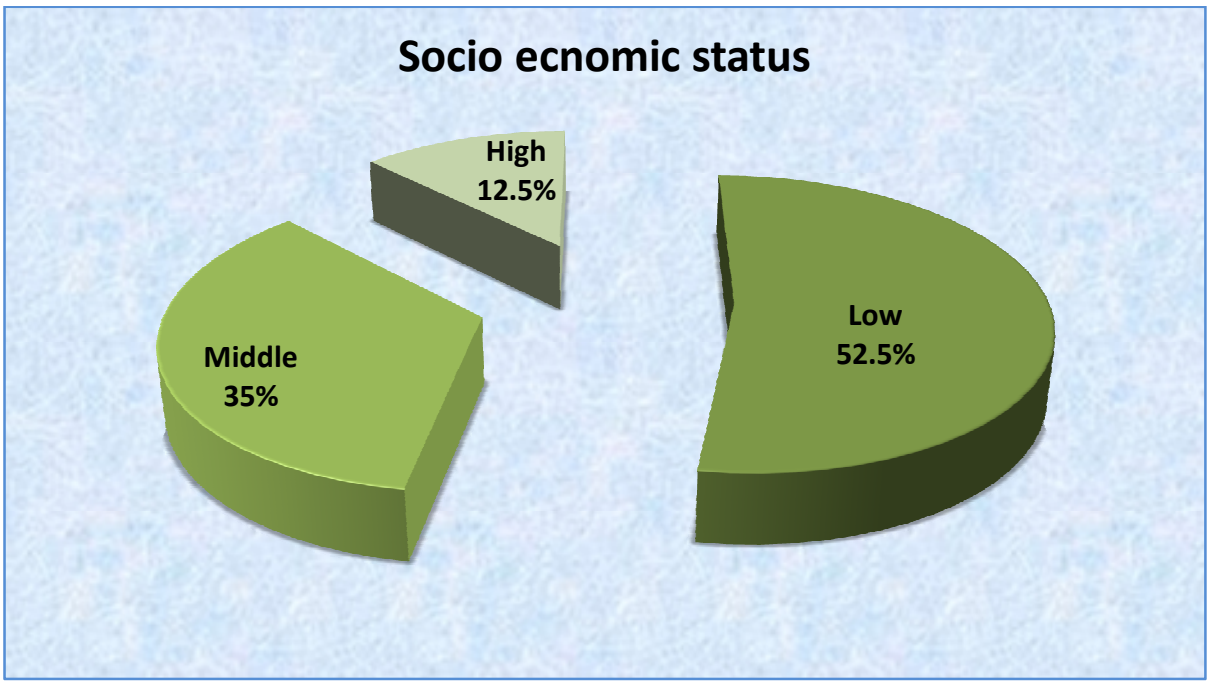


Observation:

15% of the affected patients came under the age group between 20-30 years. 27.5 % of the patients fell under the age group between 31-40 years, 37.5 % of them were between 41-50 years and 20 % of them were between 51-60 years.

3. Socio-economic status

Socio- economic status	No. of cases	Percentage %
Low Income Group	21	52.5%
Middle Income Group	14	35%
High Income Group	5	12.5%
Total	40	100%

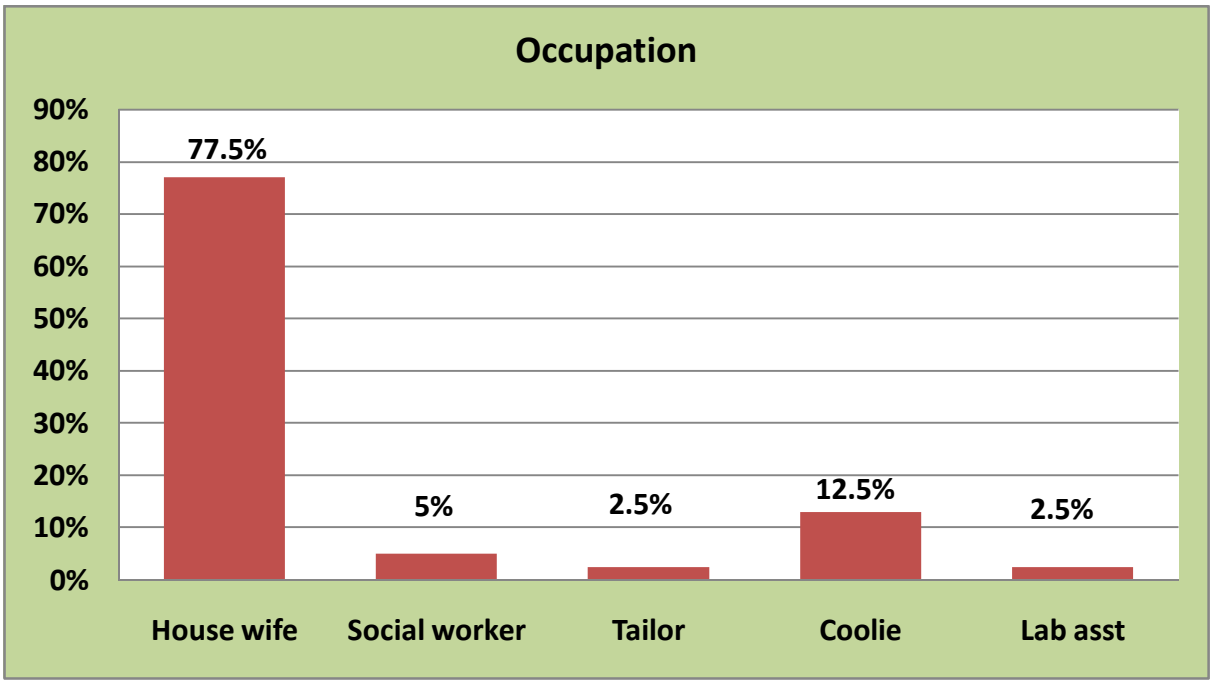


Observation:

In my study the disease was found Higher in the Low income group 52.5%. Moderate in the Middle income group 35%.Lower in the High income group12.5%.

4. Occupational distribution

OCCUPATION	NO. OF CASES	PERCENTAGE %
House maker	31	77.5%
Social worker	2	5%
Tailor	1	2.5%
Coolie	5	12.5%
Lab Asst	1	2.5%
Total	**40**	**100**%

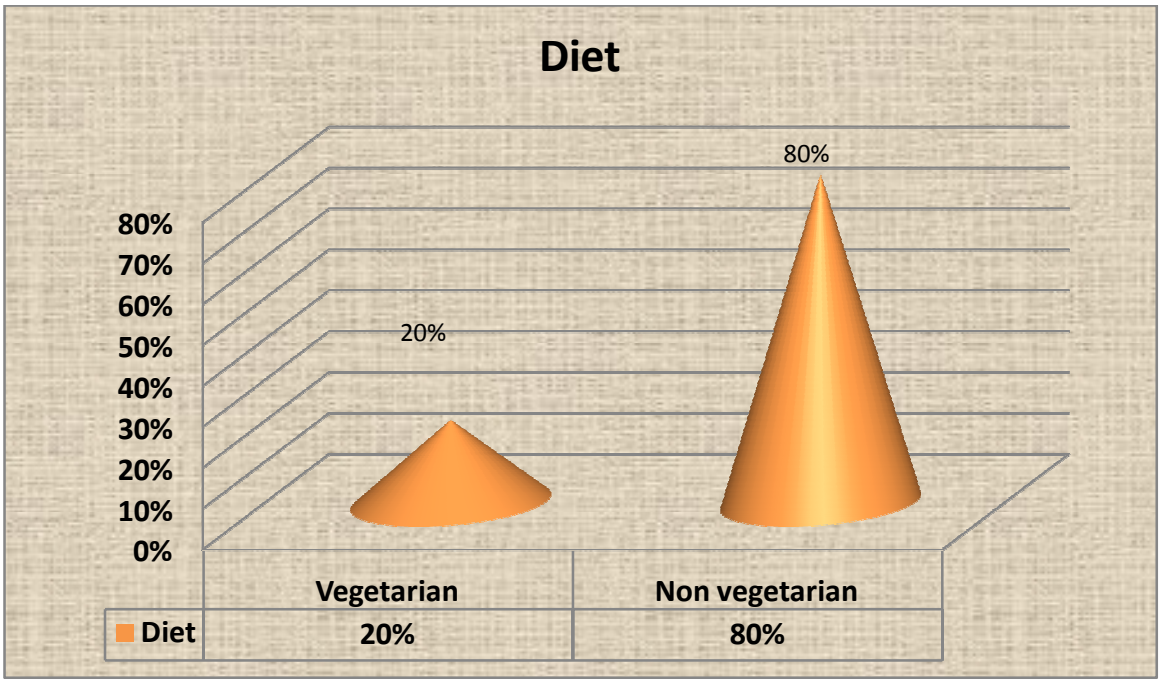


Observation:

Among 40 cases, 31 cases (77.5%) were house maker, 2 cases (5%) were social worker,1 Case (2.5%) was Tailor, 5 Cases (12.5%) were cooli, 1 Case (2.5%) was Lab asst.

5.Diet

Diet	No of cases	Percentage %
Vegetarian	8	20%
Non vegetarian	32	80%
Total	40	100%

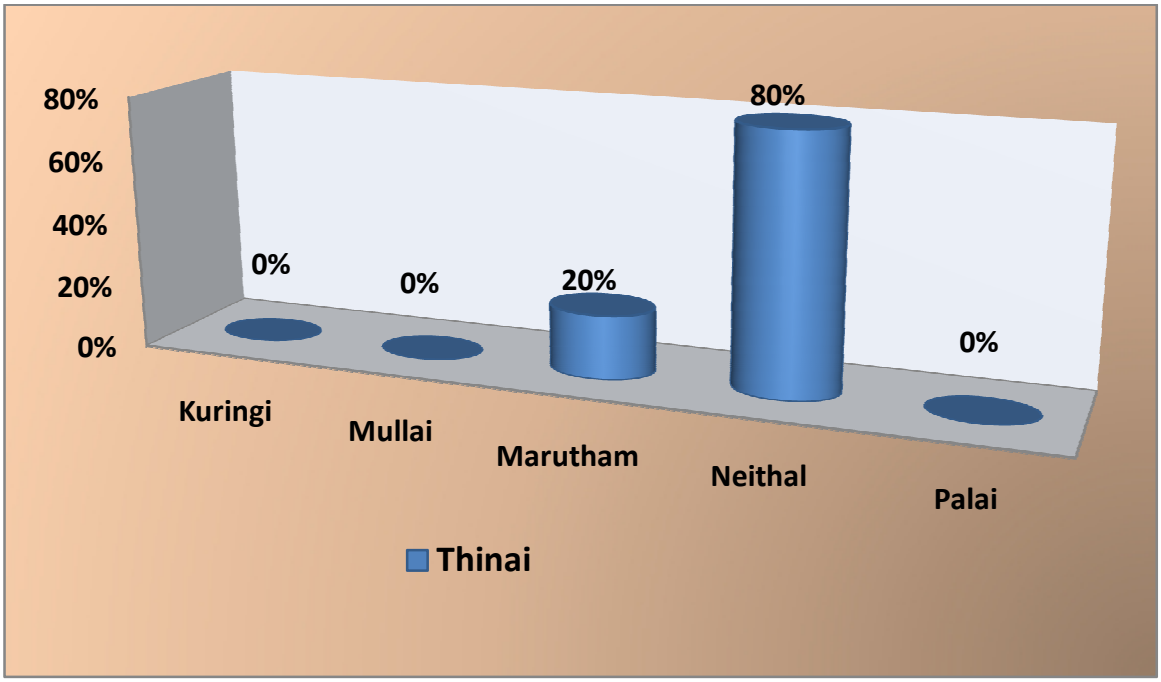


Observation:

Non vegetarian (80%) dieter were very higher than the vegetarian (20%) dieter.

6. Thinai

THINAI	Number of patients	Percentage %
Kurinji	-	-
Mullai	-	-
Marutham	8	20%
Neithal	32	80%
Palai	-	-
Total	**40**	**100%**

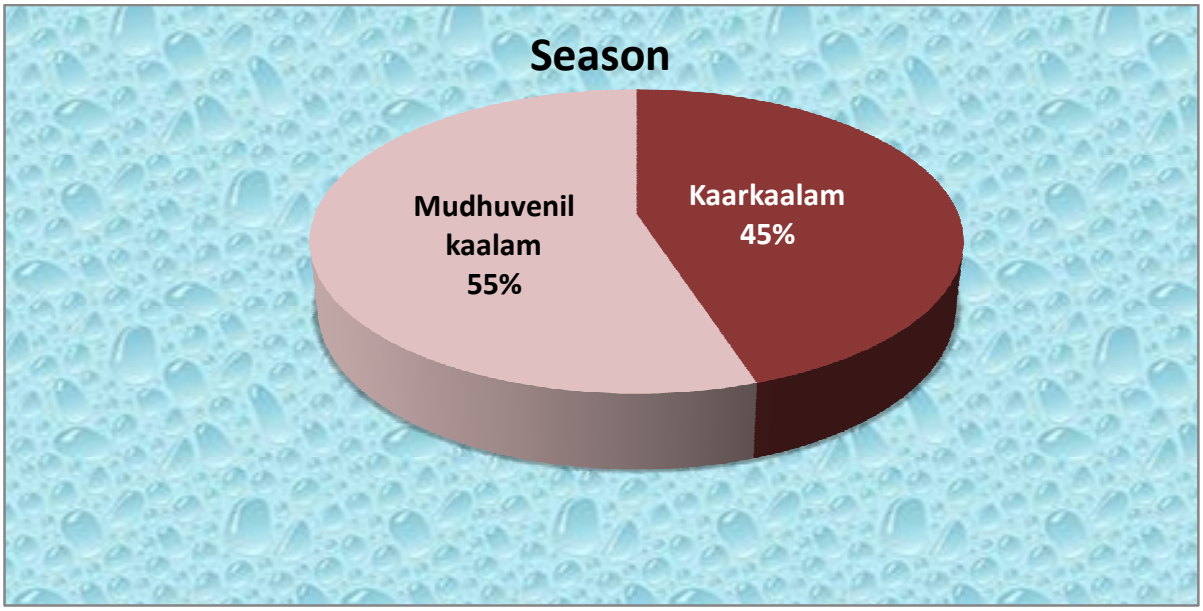


Observation:

Amoug the 40 cases, 80% of cases were from Neithal and 20% of cases were from marutham nilam.

7. Paruva kaalam (Season)

SEASON	Month and the year	Number of the patients	Percentage %
Kaarkaalam	17th Aug-17th Oct	18	45%
Koothirkaalam	18th Oct-15th Dec	-	-
Munpanikaalam	16th Dec-12th Feb	-	-
Pinpanikaalam	13th Feb-13thApr	-	-
Ilavenil kaalam	14th Apr-16th June	-	-
Mudhuvenil kaalam	17th June-16th Aug	22	55%
Total		**40**	**100%**

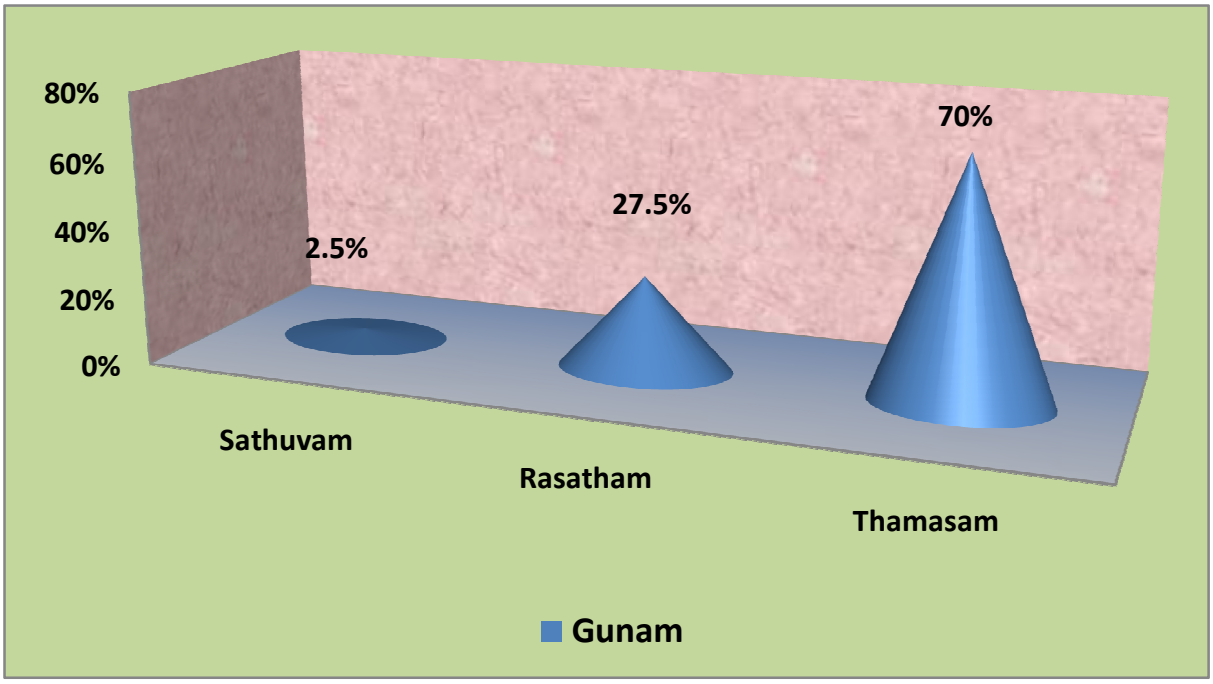


Observation:

Out of 40 cases 55% cases were took in Muthuvenil kaalam and 45% cases were took in Kaarkaalam.

8. Gunam

GUNAM	NUMBER OF PATIENTS	PERCENTAGE %
Sathuvam	1	2.5%
Rasatham	11	27.5%
Thamasam	28	70%
Total	**40**	**100%**

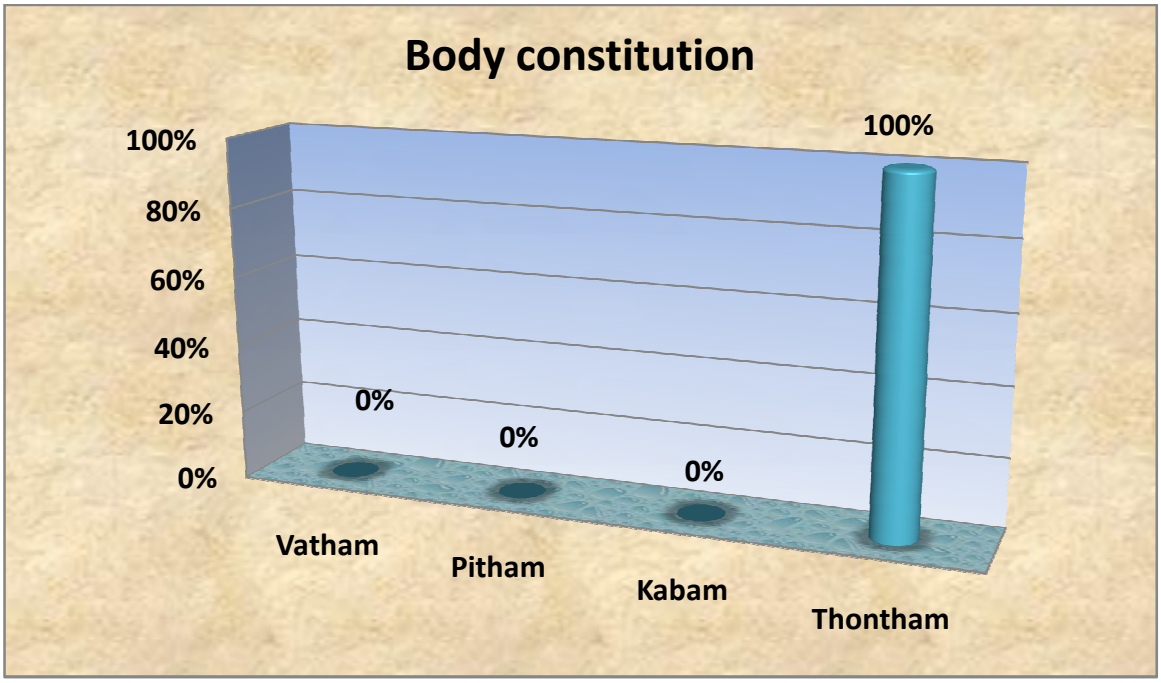


Observation:

In Gunam 70% of cases had Thamo gunam, 27.5% of cases had Raso gunam, 2.5% of cases had Sathuva gunam.

9.Body constitution

CONSTITUTION OF THE BODY	NUMBER OF PATIENTS	PERCENTAGE %
Vatha thegi	-	-
Pitha thegi	-	-
Kabam thegi	-	-
Thontha thegi	40	100%

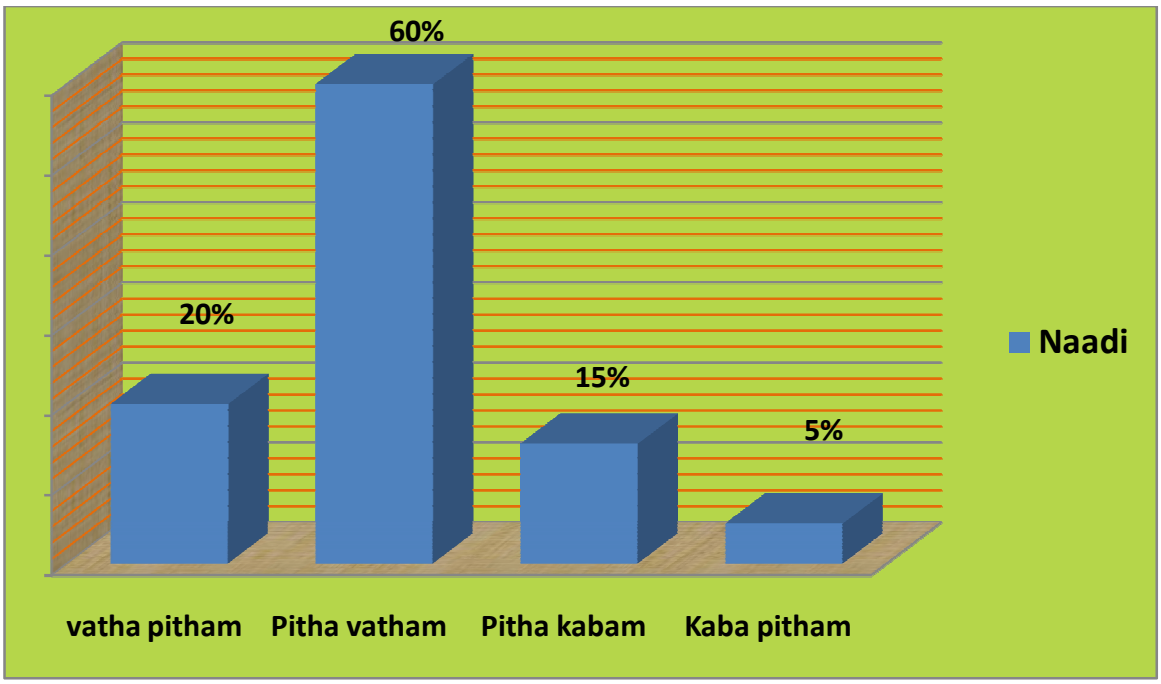


Observation:

Out of 40 cases, all the cases (100%) were came under Thontha Thegi.

10. Naadi

NAADI	NUMBER OF PATIENTS	PERCENTAGE %
Vatha pitham	8	20%
Pitha vatham	24	60%
Pitha kabam	6	15%
Kaba pitham	2	5%
Total	**40**	**100%**

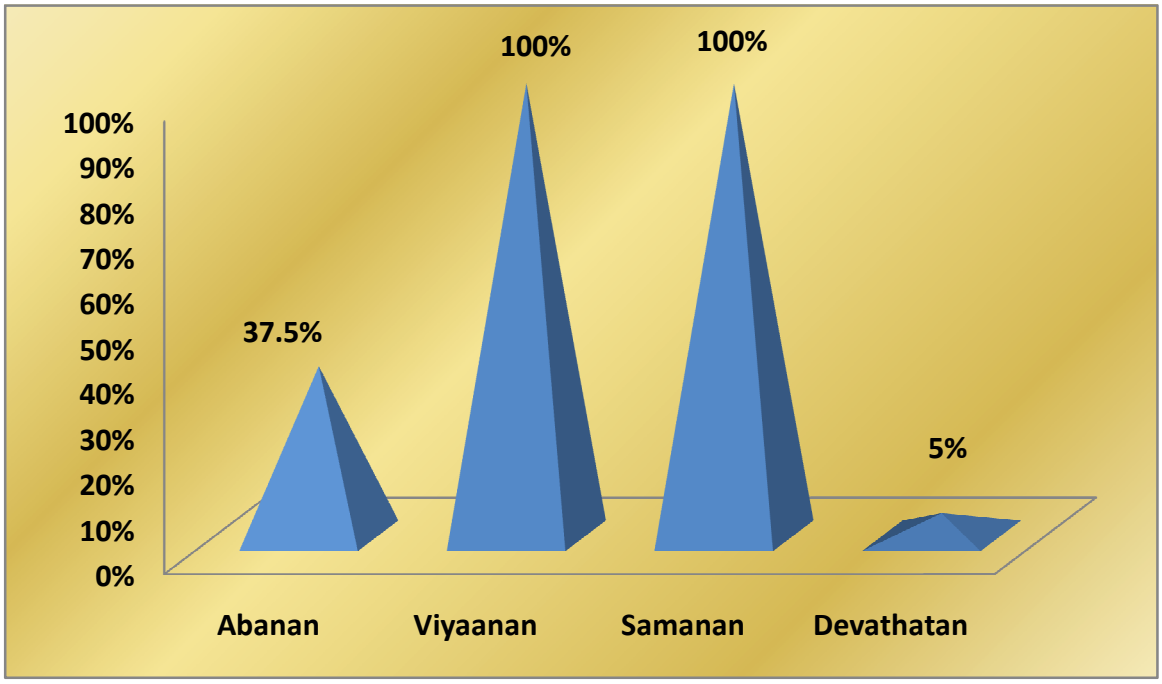


Observation :

Among 40 cases,Vatha pitha naadi was found in 8 cases (20%), Pitha vatha naadi was found in 24 cases (60%), Pitha kaba naadi was found in 6 cases (15%), Kaba pitha naadi was found in 2 cases (5%).

11.Disturbances in Vali

VALI	NUMBER OF PATIENTS	PERCENTAGE %
Praanan	-	-
Abanan	15	37.5%
Udhaanan	-	-
Viyaanan	40	100%
Samanan	40	100%
Naagan	-	-
Koormam	-	-
Kirukaran	-	-
Devathatan	2	5%
Dhananjeyan	-	-

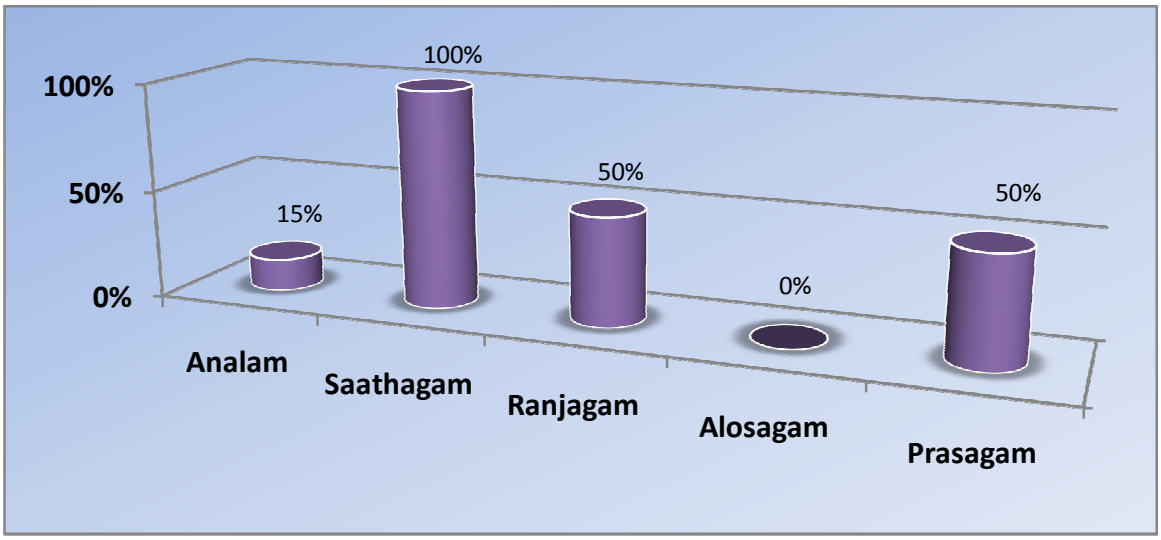


Observation

In Vatham, Viyaanan and Samanan were affected in all 40 cases (100%), Abanan was affected in 15 cases (37.5%) and Devathathan was affected in 2 cases (5%).

12. Disturbances in Azhal

Azhal	NUMBER OF PATIENTS	PERCENTAGE %
Analam	6	15%
Saathagam	40	100%
Ranjagam	20	50%
Alosagam	-	-
Prasagam	20	50%



Observation

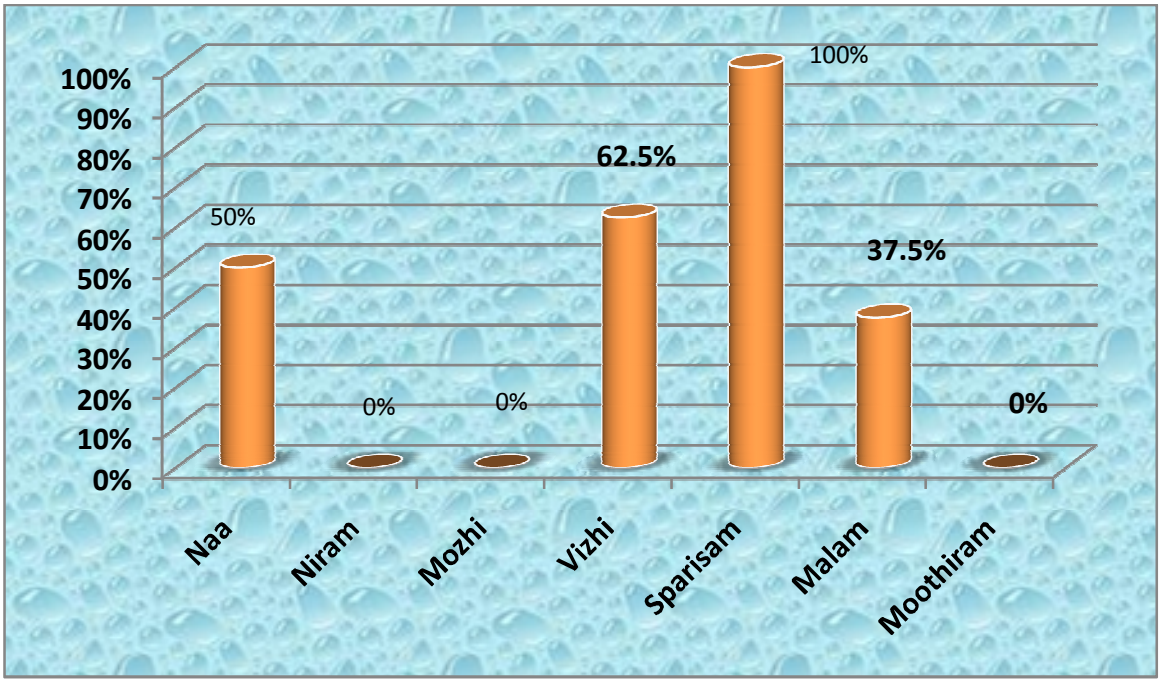
Among 40 cases, Saathagam was affected in all 40 cases (100%) , Ranjagam and Prasagam were affected in 20 cases(50%), Analam was affected in 6 cases (15%) .

13. Disturbances in Iyam

Only Santhigam was affected in all the 40 cases.

14. Envagai thervugal

ENVAGAI THERVUGAL	NUMBER OF CASES	PERCENTAGE %
Naa	20	50%
Niram	-	-
Mozhi	-	-
Vizhi	25	62.5%
Sparisam	40	100%
Malam	15	37.5%
Moothiram	-	-

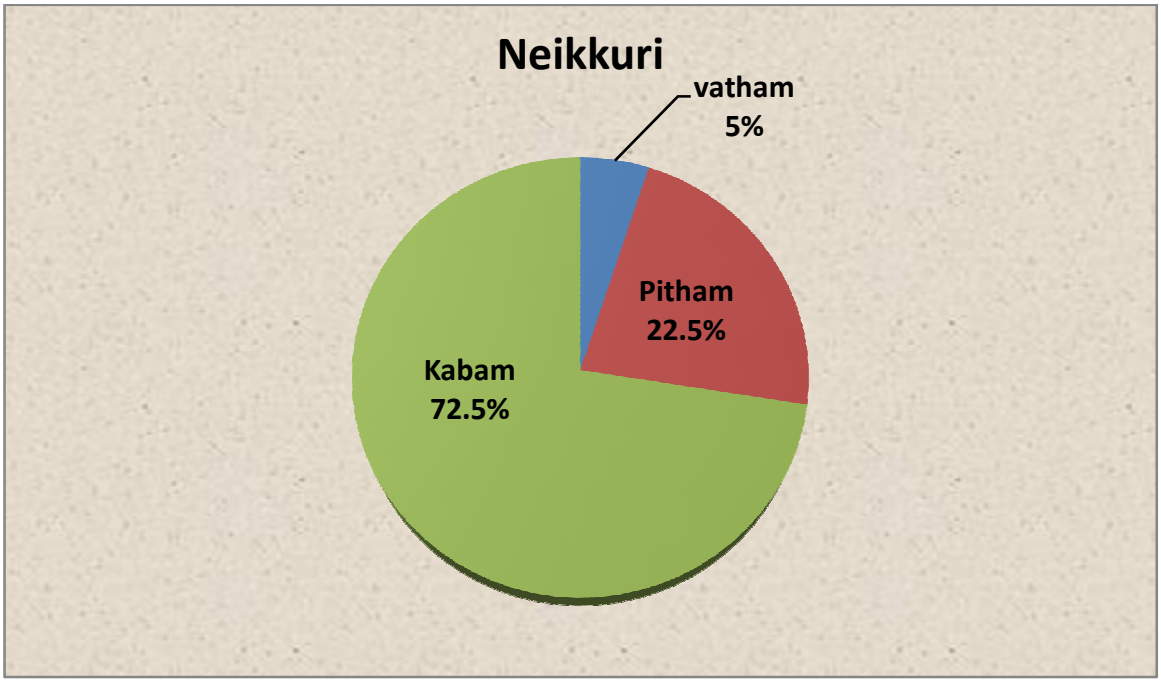


Observation:

In Envagai thervu , Sparisam was affected in 100% of patients where as Vizhi was affected in 62.5%, Naa was affected in 50% and Malam was affected in 37.5% of patients.

15. Neikkuri

SPREADING PATTERN	NUMBER OF PATIENTS	PERCENTAGE %
Aravena neendathu – Vatha neer	2	5%
Aazhi pol paraviyadhu – Pitha neer	9	22.5%
Muthothu nindrathu – Kaba neer	29	72.5%
Total	**40**	**100%**

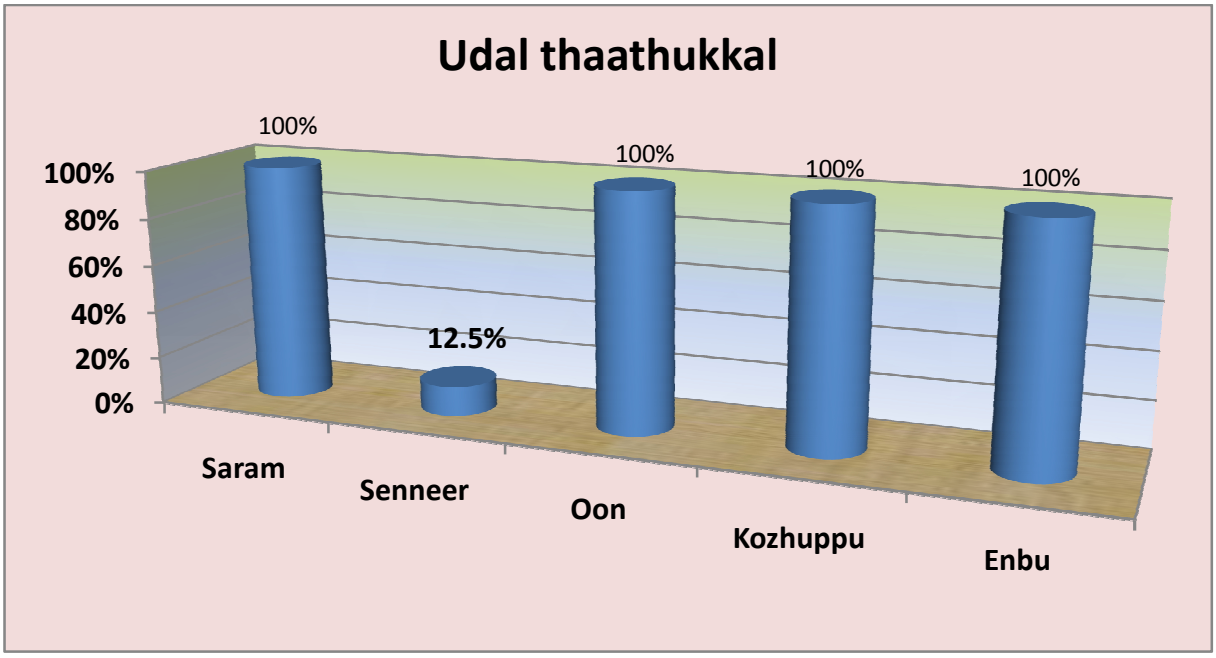


Observation:

Among 40 cases, Vatha neer was found in 2 cases (5%) , Pitha neer was found in 9 cases (22.5%) and Kaba neer was found in 29 cases (72.5%)**.**

16.Udal Thaathukkal

UDAL THAATHUKKAL	NUMBER OF PATIENTS	PERCENTAGE %
Saaram	40	100 %
Senneer	5	12.5%
Oon	40	100%
Kozhuppu	40	100%
Enbu	40	100%
Moolai	-	-
Sukkilam/Suronitham	-	-

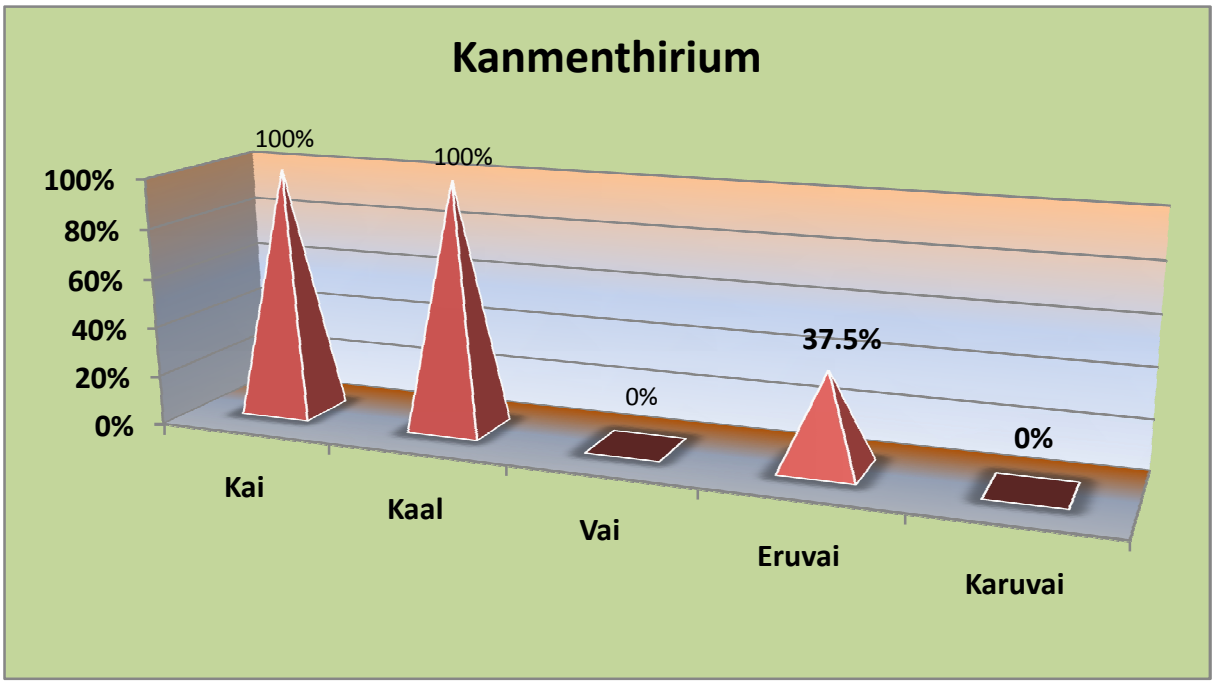


Observation:

In my study Saram, Oon, Kozhuppu and Enbu were affected in all 40 cases and Senneer was affected in 5 cases only.

17. Kanmenthiriyam

Kanmenthiriyam	No of cases	Percentage %
Kai	40	100%
Kaal	40	100%
Vai	-	-
Eruvai	15	37.5%
Karuvai	-	-

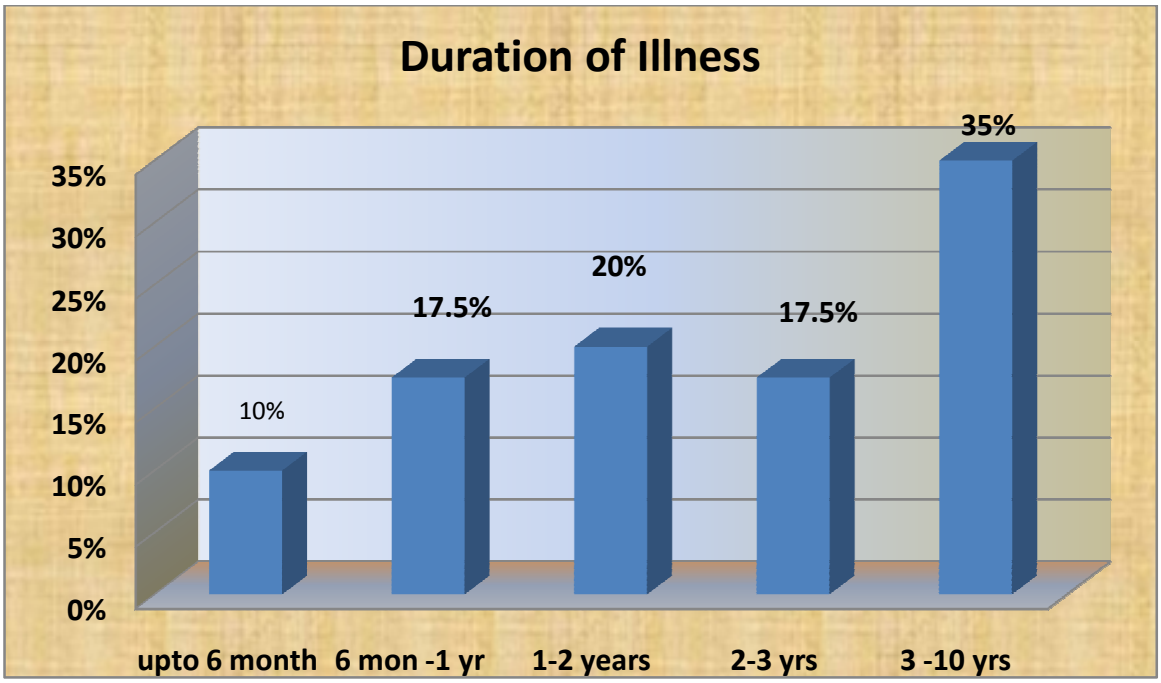


Observation:

In Kanmendrium Kai and Kaal were affected in 100% cases, Eruvai was affected in 37.5% cases.

18. Duration of Illness:

DURATION OF ILLNESS	NUMBER OF CASES	PERCENTAGE %
Upto 6 months	4	10%
6 months-1 year	7	17.5%
1-2 years	8	20%
2-3 years	7	17.5%
3-10 years	14	35%
Total	40	100%

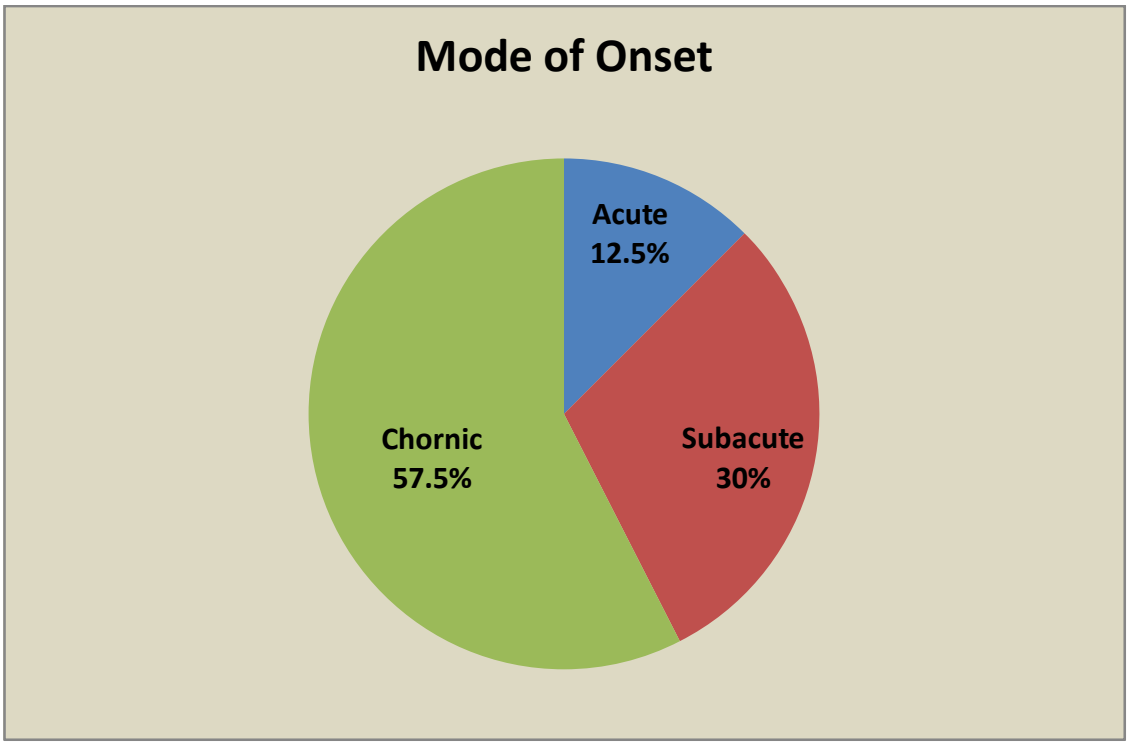


Observation:

In my study, about 35% cases had 3-10 yrs of duration, 17.5% cases had 2-3 yrs of duration, 20% cases had 1-2 yrs of duration, 17.5% cases had 6 mon – 1yr of duration and 10% cases had 6 months of duration.

19. Mode of onset

Mode of onset	No of Cases	Percentage %
Acute	5	12.5%
Subacute	12	30%
Chronic	23	57.5%
Total	**40**	**100%**

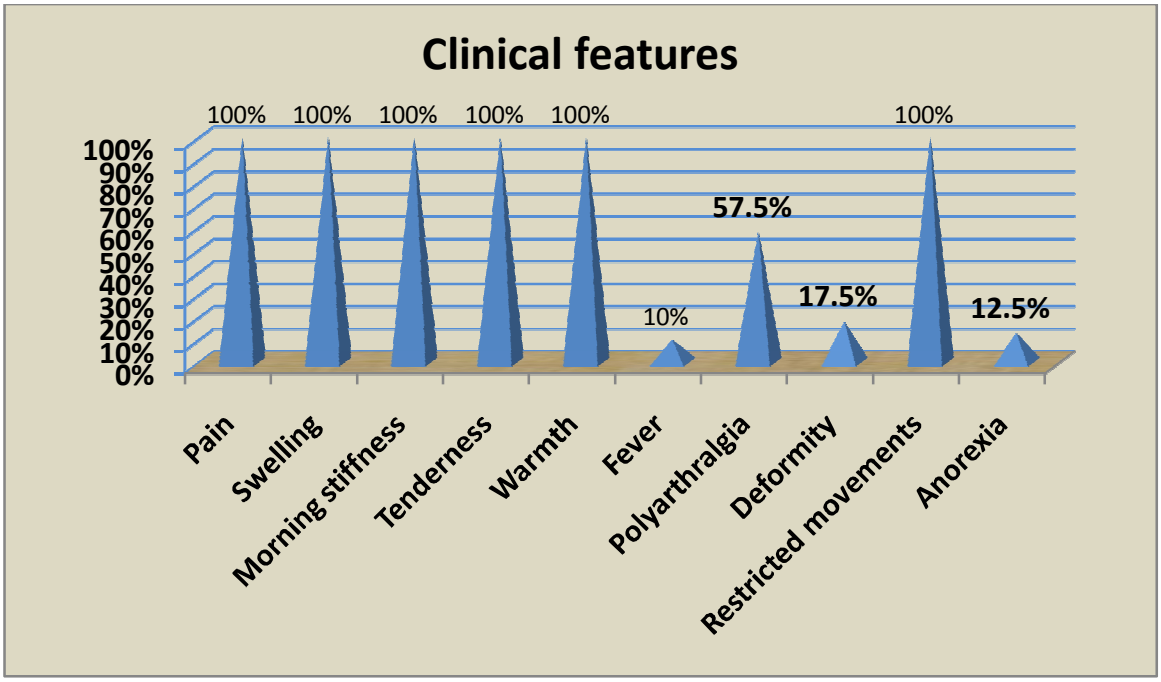


Observation :

In my study 12% of cases had acute onset of illness, 30% of cases had subacute and 57.5% of cases had chronic onset of illness.

20. Clinical features:

Clinical features	No. of cases	Percentage %
Pain	40	100%
Swelling	40	100%
Morning stiffness	40	100%
Tenderness	40	100%
Warmth	40	100%
Fever	4	10%
Polyarthralgia	23	57.5%
Deformity	7	17.5%
Restricted movements	40	100%
Anorexia	5	12.5%

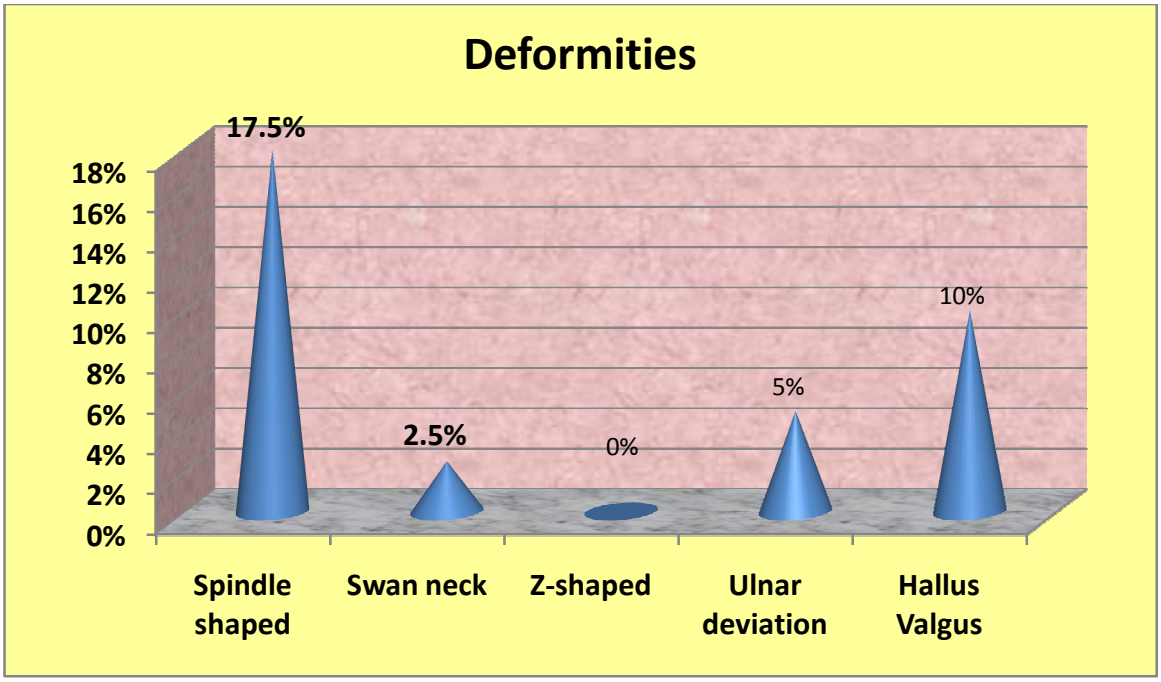


Observation:

In my study, all 100% of cases had Pain, Swelling, Early morning stiffness, Warmth, Tenderness, and Restricted movements. 10% cases had Fever, 12.5% cases had Anorexia, 17.5% cases had Deformities, 57.5% cases had Polyarthralgia symptoms.

21. Deformities:

DEFORMITY	NO OF CASES	PERCENTAGE %
Spindle shaped fingers	7	17.5%
Swan neck	1	2.5%
Z Shaped	-	-
Ulnar deviation of hand	2	5%
Hallus Valgus	4	10%

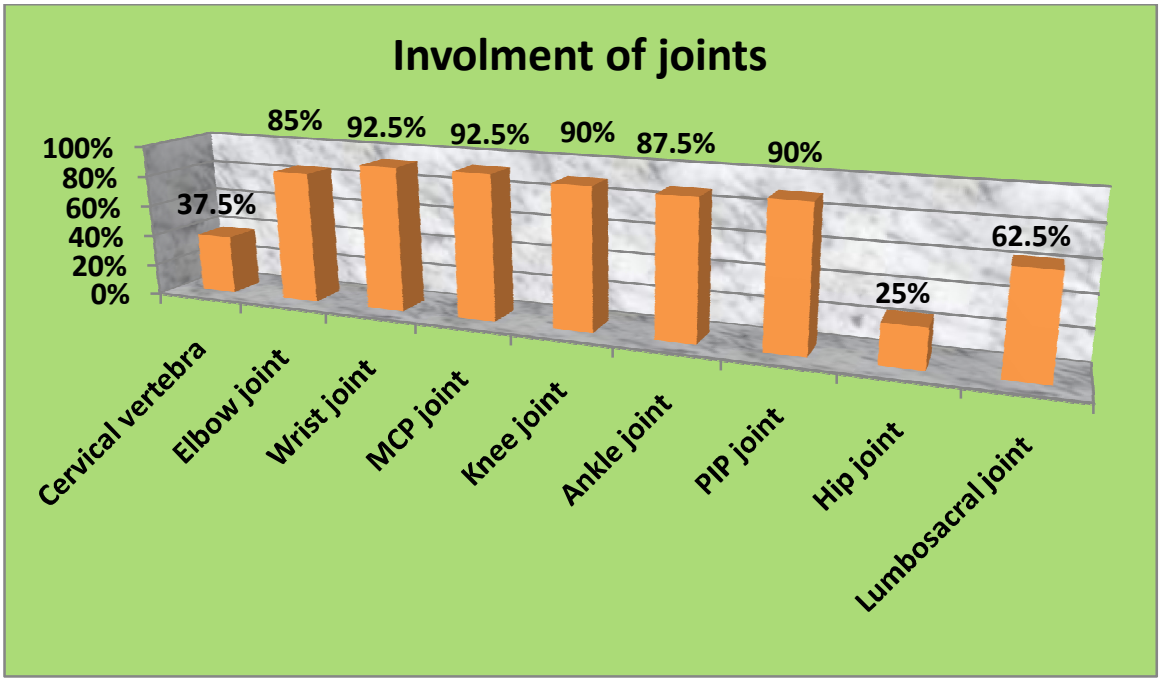


Observation:

In my study, 17.5% of cases had Spindle shaped deformity, 10% of cases had Hallus valgus derormity, 5% of cases had Ulnar deviation and 2.5% cases had Swan neck deformity.

22. Involvement of joints:

Name of the joint	No of cases	Percentage %
Cervical vertebrae	15	37.5%
Elbow joint	34	85%
Wrist joint	37	92.5%
MCP joint	37	92.5%
Knee joint	36	90%
Ankle joint	35	87.5%
PIP joint	36	90%
Hip joint	10	25%
Lumbosacral joint	25	62.5%



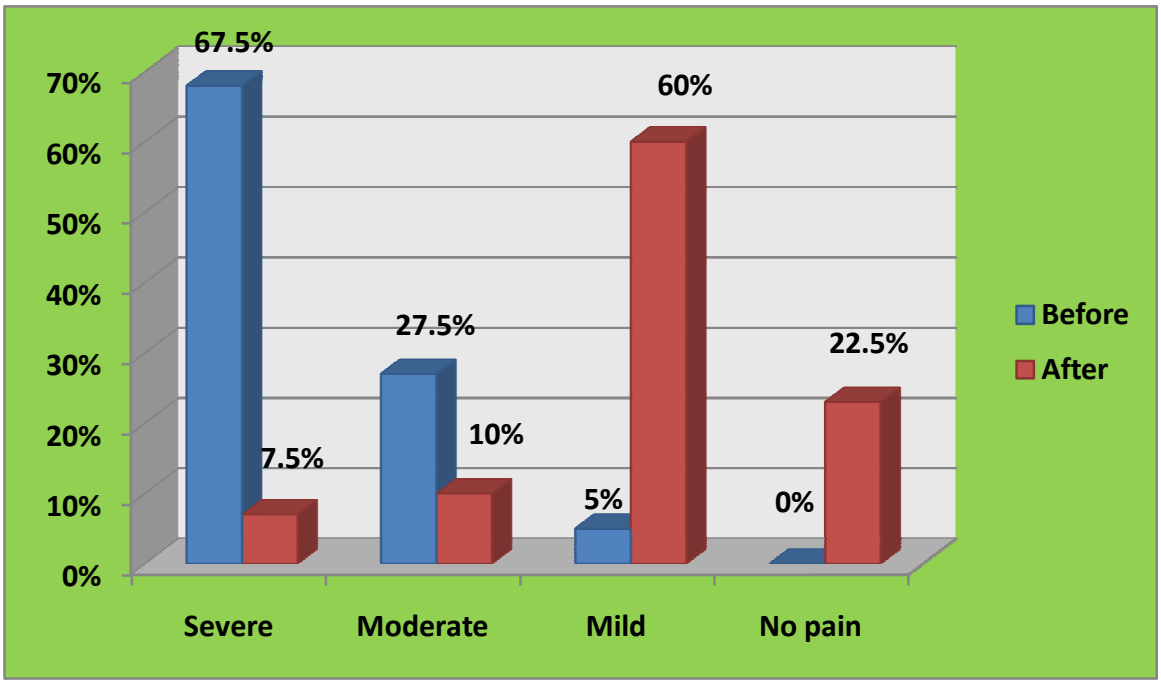
Observation:

In my study, wrist and MCP joints were involved in 92.5% cases, Knee and PIP joints were involved in 90% , Ankle joint was involved in 87.5% cases , Elbow joint was involved in 85% cases , Lumbosacral joint was involved in 62.5% cases, Cervical vertebrae were involved in 37.5% cases, and Hip joint was involved in 25% cases.

RESULTS AFTER TREATMENT

23 A. Reduction of pain

Pain	Before Treatment		After Treatment	
	No of patient	Percentage %	No of patient	Percentage %
Severe Pain	27	67.5%	3	7.5%
Moderate Pain	11	27.5%	4	10%
Mild Pain	2	5%	24	60%
No Pain	-	-	9	22.5%
Total	**40**	**100%**	**40**	**100%**



Observation:

In my study,Before treatment 67.5% of cases had Severe pain, 27.5% of cases had Moderate pain and 5% of cases had Mild pain.

After treatment 7.5% of cases had Severe pain, 10% of cases had Moderate pain, 60% of cases had Mild pain and 22.5%of cases had No pain.

23.B. Functional ability gradation

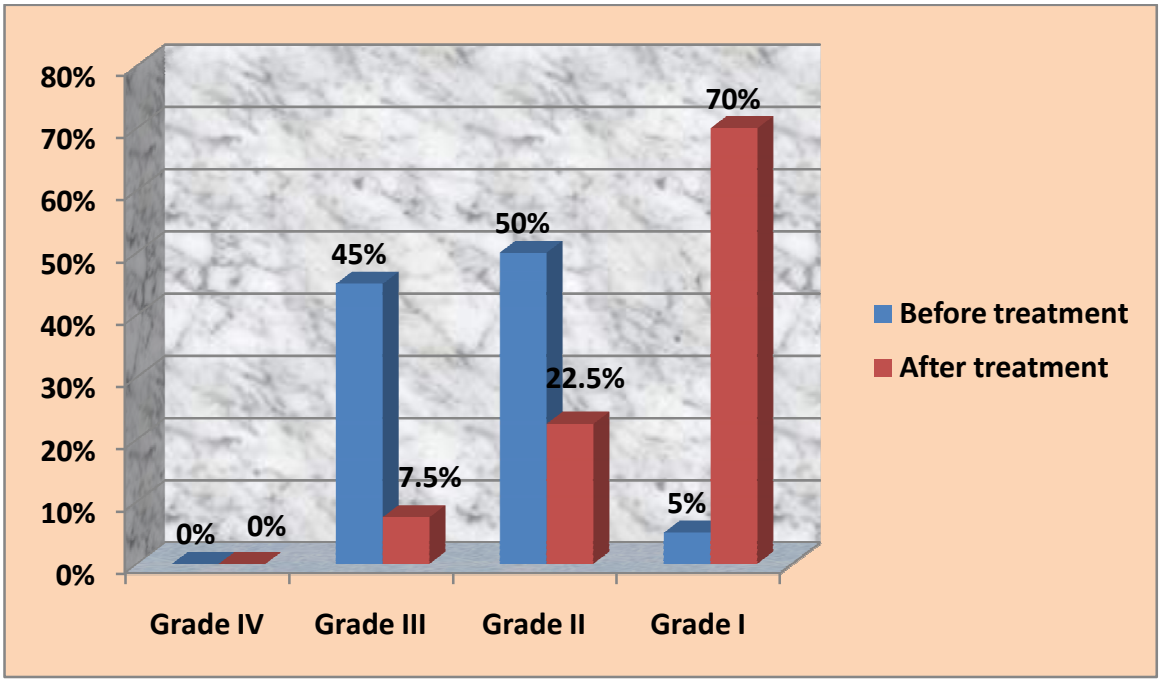
Grade	No. of patients			
	Before Treatment	%	After Treatment	%
Grade IV	-	-	-	-
GradeIII	18	45%	3	7.5%
GradeII	20	50%	9	22.5%
GradeI	2	5%	28	70%
Total	**40**	**100%**	**40**	**100%**

Grade I -Fit for all activities

Grade II -Mild restriction

Grade III -Moderate restriction

Grade IV -Confined to chair or bed ridden

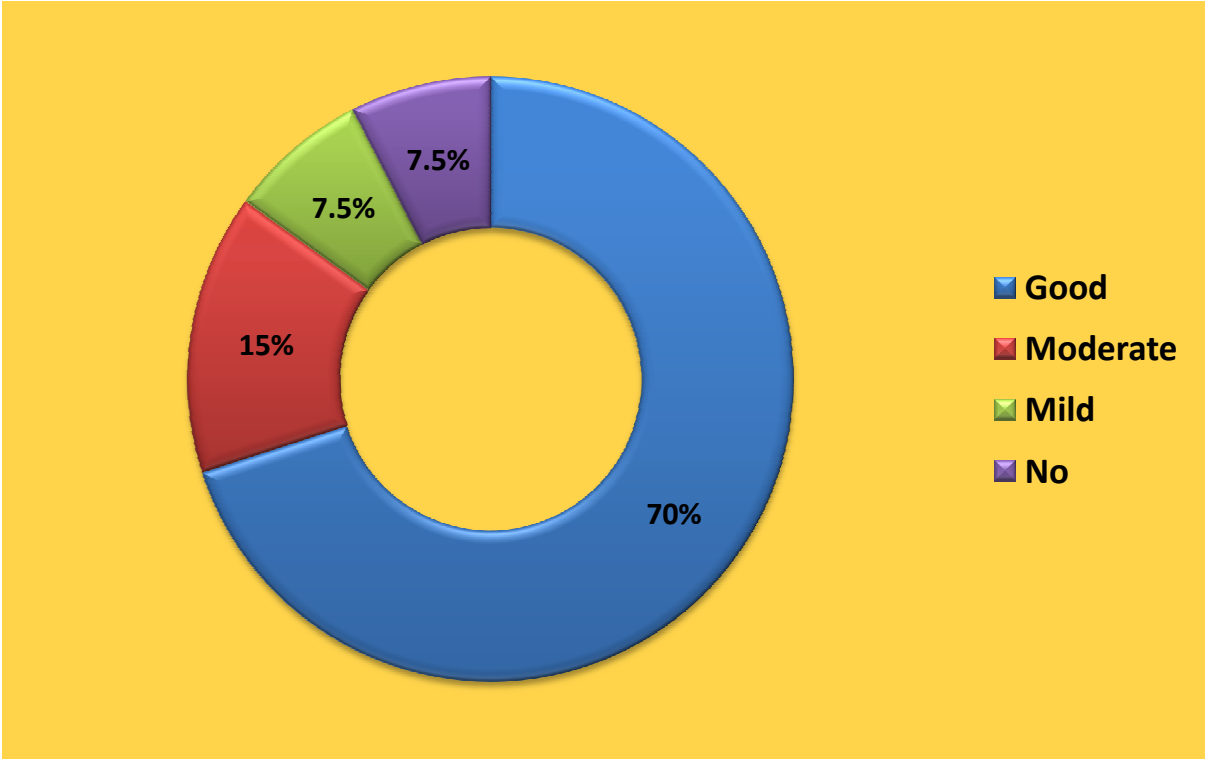


Observation

After the treatment among 40 cases, Restriction was reduced in 70% of cases, Mild restriction was found in 22.5% of cases, Moderate restriction was found in 7.5% of cases.

23.C. Overall result after treatment

Improvement	No of cases	Percentage %
Good improvement	28	70%
Moderate improvement	6	15%
Mild improvement	3	7.5%
No improvement	3	7.5%
Total	**40**	**100%**



Observation:

In my study, 70% cases showed Good improvement, 15% cases showed Moderate improvement, 7.5% cases showed Mild improvement and 7.5% cases showed No improvement.

STATISTICAL ANALYSIS

TREATMENT WITH THE TRIAL DRUG

All collected data were entered into MS Excel software using different columns as variables and rows as patients. SPSS software was used to perform statistical analysis. Basic descriptive statistics include frequency distributions and cross-tabulations were performed. The quantity variables were expressed as Mean ± Standard Deviation and qualitative data as percentage. A probability value of <0.05 was considered to indicate as statistical significance. Paired 't' test was performed for determining the significance between before and after treatment.

Paired Samples Statistics

	Mean	N	Std. Deviation	Std. Error Mean
BEFORE	6.78	40	1.790	0.283
AFTER	2.33	40	2.005	0.317

The mean± standard deviation of pain score at before and after treatment were 6.78 ± 1.79 and 2.33 ± 2 respectively which is statistically significant (t= 13.02 p<0.001).

STATISTICAL ANALYSIS

VARMAM TREATMENT ALONG WITH THE TRIAL DRUG

All collected data were entered into MS Excel software using different columns as variables and rows as patients. SPSS software was used to perform statistical analysis. Basic descriptive statistics include frequency distributions and cross-tabulations were performed. The quantity variables were expressed as Mean ± Standard Deviation and qualitative data as percentage. A probability value of <0.05 was considered to indicate as statistical significance. Paired 't' test was performed for determining the significance between before and after treatment.

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	BEFORE	6.60	10	1.506	0.476
	AFTER	1.70	10	1.567	0.496

Paired Samples Test

		t	df	Sig. (2-tailed)
Pair 1	BEFORE - AFTER	7.453	9	0.000

The mean± standard deviation of pain score of patients who were subjected to Varmam before and after treatment were 6.60 ± 1.51 and 1.70 ± 1.56 respectively which is statistically significant (t= 7.45 p<0.001).

LABARATORY INVESTIGATIONS BEFORE AND AFTER TREATMENT

OP- PATIENTS

S.No	OP No	NAME	AGE/ SEX	Hb (gm/dl)		TOTAL RBC COUNT(million/ cu.mm)		ESR (mm/hour)		TOTAL WBC COUNT	
				BT	AT	BT	AT	BT	AT	BT	AT
1.	C76203	Vikneswari.A	31/F	12.5	11.6	4.9	4.7	30	78	6400	6000
2.	C71572	Maheshwari.D	50/F	10.8	12.6	4.5	4.7	15	14	8000	8700
3.	C39854	Lalitha.S	47/F	14.2	13.0	4.2	4.1	18	8	9000	7500
4.	C75158	Dhileep kumar.S	50/M	15.4	15.8	5.7	6.0	4	8	12200	10600
5.	C82483	Malarvizhi.N	50/F	8.9	10.2	4.2	4.5	82	22	6600	7200
6.	C67099	Valarmathi.K	51/F	13.2	13.1	4.3	4.2	10	10	8800	10100
7.	C65503	Jayanthi.G	42/F	10.6	9.9	4.2	4.0	10	38	9400	9300
8.	C87033	Revathy.M	50/F	12.7	13.0	4.4	4.3	18	30	6500	7300
9.	C66185	Gajalakshmi.A	51/F	10.3	10.2	4.4	4.5	46	4	9300	9400
10.	B95982	Shantha kumari.K	31/F	13.1	11.2	4.0	4.1	24	12	9000	8400
11.	C47290	Lakshmi maran.S	43/F	12.6	12.6	4.1	4.1	22	6	5500	5600
12.	C87533	Gnanavalli.P	40/F	11.8	12.1	3.9	4.1	24	60	8600	7300
13.	C53634	Bhavani.V	35/F	10.9	11.3	4.3	4.5	32	36	9000	6700
14.	C52991	Sangeetha.R	34/F	13.6	12.9	3.8	4.7	10	14	5400	4800
15.	C48506	Christilla.K	32/F	11.0	10.3	4.1	4.2	18	12	6600	6000
16.	C87390	Banumathy.R	38/F	7.6	7.8	4.0	4.2	6	24	5600	5900
17.	C73700	Kalavathy.C	56/F	12.2	12.5	4.4	4.5	74	56	9200	9100
18.	B12088	Selvakumar.R	41/M	13.2	13.6	4.3	4.8	10	15	8400	9900
19.	C67303	Ganesh.R	23/M	14.6	13.5	5.2	5.6	38	12	12000	10700
20.	C53286	Alamelu.M	50/F	12.8	11.6	4.7	5.0	12	22	8500	10500

LABARATORY INVESTIGATIONS BEFORE AND AFTER TREATMENT

IP- PATIENTS

S.No	IP No	NAME	AGE/ SEX	Hb (gm/dl)		TOTAL RBC COUNT(millon/ cu.mm)		ESR (mm/hr)		TOTAL WBC COUNT	
				BT	AT	BT	AT	BT	AT	BT	AT
21.	4008	Rani.H	24/F	10.0	10.8	4.0	4.5	50	20	8300	5300
22.	4010	Latha.R	40/F	12.8	13.9	4.6	5.0	48	14	7200	9300
23.	4984	Kaviyarasu.R	22/M	12.1	12.6	5.1	5.2	14	12	7800	10100
24.	4031	Gowri.S	46/F	11.3	11.3	3.8	4.1	8	38	6800	6500
25.	4032	Devi.V	60/F	12.9	12.7	4.3	4.2	10	32	5600	6500
26.	5018	Deva prabhu.A	23/M	15.6	13.7	5.3	5.0	40	4	10700	6700
27.	4057	Karpagam.D	45/F	10.7	9.6	4.4	6.1	4	26	5500	6100
28.	5019	Ekambaram.V	43/M	15.2	13.6	5.0	5.1	6	4	6900	7200
29.	4066	Durgadevi.D	28/F	11.2	12.4	4.2	4.4	20	16	8000	8100
30.	4081	Padmini.K	39/F	13.5	12.2	5.1	5.2	12	12	8600	9000
31.	4084	Padma.S	50/F	12.8	12.1	4.6	4.2	18	20	9900	9500
32.	4090	Bhuvaneswari.N	55/F	12.7	10.4	4.4	4.3	18	20	9200	6900
33.	4093	Boomadevi.S	34/F	11.1	8.8	4.0	4.2	48	15	7100	8300
34.	4111	Mallini.M	38/F	14.3	11.7	4.9	4.9	4	16	7000	7200
35.	4128	Manonmani.P	57/F	13.1	11.9	4.8	5.2	16	6	6700	7900
36.	4136	Sundari.B	55/F	13.7	11.7	4.6	4.5	18	12	6800	5700
37.	4166	Vanitha.R	25/F	11.5	10.9	4.3	4.5	54	30	10700	11100
38.	4173	Rajammal.V	46/F	11.9	12.1	4.3	4.2	8	10	6900	7100
39.	5118	Ragavel.S	47/M	12.4	12.1	3.9	3.7	120	79	10600	11200
40	4183	Jayanthi..S	52/F	11.9	12.1	4.4	4.5	48	24	6800	7100

LABARATORY INVESTIGATIONS BEFORE AND AFTER TREATMENT

OP- PATIENTS

S.No	OP No	NAME	AGE/ SEX	BLOOD GLUCOSE (F)		BLOOD GLUCOSE (PP)		TOTAL CHOLESTEROL		UREA		CREATININE	
				BT	AT	BT	AT	BT	AT	BT	AT	BT	AT
1.	C76203	Vikneswari.A	31/F	103	92	103	92	120	111	18	15	0.5	0.4
2.	C71572	Maheshwari.D	50/F	94	72	103	116	171	151	25	19	0.7	0.5
3.	C39854	Lalitha.S	47/F	100	95	127	105	208	174	14	15	0.4	0.4
4.	C75158	Dhileepkumar.S	50/M	94	99	136	126	148	140	19	15	0.5	0.4
5.	C82483	Malarvizhi.N	50/F	83	102	113	114	239	187	21	14	0.6	0.4
6.	C67099	Valarmathi.K	51/F	78	91	138	108	160	148	23	19	0.6	0.5
7.	C65503	Jayanthi.G	42/F	94	95	115	112	140	110	17	14	0.2	0.4
8.	C87033	Revathy.M	50/F	86	109	101	121	206	183	16	14	0.5	0.5
9.	C66185	Gajalakshmi.A	51/F	83	84	128	106	164	136	20	16	0.6	0.5
10.	B95982	Shantha kumari.K	31/F	83	96	104	102	151	205	14	15	0.4	0.5
11.	C47290	Lakshmi maran.S	43/F	85	86	102	98	160	134	14	16	0.5	0.5
12.	C87533	Gnanavalli.P	40/F	82	88	108	106	215	190	19	17	0.7	0.5
13.	C53634	Bhavani.V	35/F	80	88	92	98	114	145	14	14	0.4	0.4
14.	C52991	Sangeetha.R	34/F	92	84	110	92	117	118	14	14	0.5	0.4
15.	C48506	Christilla.K	32/F	98	92	117	100	110	127	16	19	0.5	0.5
16.	C87390	Banumathy.R	38/F	103	102	123	119	161	207	15	14	0.6	0.4
17.	C73700	Kalavathy.C	56/F	82	90	118	111	220	225	15	19	0.8	0.9
18.	B12088	Selvakumar.R	41/M	90	92	100	111	172	165	14	20	0.4	0.5
19.	C67303	Ganesh.R	23/M	66	86	103	97	92	135	23	20	0.7	0.7
20.	C53286	Alamelu.M	50/F	100	108	126	135	254	305	14	15	0.4	0.6

LABARATORY INVESTIGATIONS BEFORE AND AFTER TREATMENT

IP- PATIENTS

S.No	IP No	NAME	AGE/ SEX	BLOOD GLUCOSE (F)		BLOOD GLUCOSE (PP)		TOTAL CHOLE STEROL		UREA		CREAT ININE	
				BT	AT	BT	AT	BT	AT	BT	AT	BT	AT
21.	4008	Rani.H	24/F	85	91	110	108	209	144	16	14	0.5	0.4
22.	4010	Latha.R	40/F	87	89	106	102	161	143	16	18	0.5	0.5
23.	4984	Kaviyarasu.R	22/M	84	70	101	93	114	95	14	14	0.4	0.4
24.	4031	Gowri.S	46/F	90	87	125	126	154	137	14	15	0.5	0.4
25.	4032	Devi.V	60/F	97	84	108	100	154	209	25	25	0.7	0.9
26.	5018	Deva prabhu.A	23/M	98	95	106	110	106	110	14	18	0.4	0.5
27.	4057	Karpagam.D	45/F	107	98	140	135	162	140	20	16	0.6	0.5
28.	5019	Ekambaram.V	43/M	106	111	121	123	145	158	16	14	0.6	0.5
29.	4066	Durgadevi.D	28/F	86	90	107	111	169	165	24	29	0.7	0.9
30.	4081	Padmini.K	39/F	115	114	164	167	179	205	14	14	0.4	0.5
31.	4084	Padma.S	50/F	105	102	134	125	168	180	17	19	0.5	0.4
32.	4090	Bhuvaneswari.N	55/F	119	133	234	287	226	140	15	19	0.5	0.6
33.	4093	Boomadevi.S	34/F	88	90	102	110	149	177	16	14	0.5	0.5
34.	4111	Mallini.M	38/F	116	88	130	101	137	123	15	14	0.4	0.5
35.	4128	Manonmani.P	57/F	89	113	108	176	216	222	23	14	0.6	0.4
36.	4136	Sundari.B	55/F	100	85	127	137	180	213	20	15	0.6	0.4
37.	4166	Vanitha.R	25/F	94	99	125	120	105	125	14	15	0.4	0.5
38.	4173	Rajammal.V	46/F	133	120	152	145	173	180	22	25	0.9	0.8
39.	5118	Ragavel.S	47/M	84	90	129	121	140	157	14	16	0.4	0.5
40	4183	Jayanthi..S	52/F	93	95	103	111	117	120	14	16	0.6	0.4

LABARATORY INVESTIGATIONS BEFORE AND AFTER TREATMENT

OP-PATIENTS

S.No	OP No	NAME	AGE/ SEX	Total bilirubin		SGOT		SGPT		Alkaline phosphatase	
				BT	AT	BT	AT	BT	AT	BT	AT
1.	C76203	Vikneswari.A	31/F	0.8	0.6	21	12	22	15	196	149
2.	C71572	Maheshwari.D	50/F	0.5	0.5	26	14	51	16	170	181
3.	C39854	Lalitha.S	47/F	0.5	0.5	30	17	38	19	197	166
4.	C75158	Dhileep kumar.S	50/M	0.6	0.5	29	14	30	16	156	166
5.	C82483	Malarvizhi.N	50/F	0.5	0.4	10	12	16	14	154	159
6.	C67099	Valarmathi.K	51/F	0.5	0.6	13	13	14	15	130	179
7.	C65503	Jayanthi.G	42/F	0.3	0.3	10	16	11	19	152	176
8.	C87033	Revathy.M	50/F	0.6	0.4	27	14	29	16	191	140
9.	C66185	Gajalakshmi.A	51/F	0.6	0.5	12	14	14	16	135	172
10.	B95982	Shantha kumari.K	31/F	0.7	0.4	10	15	8	17	186	185
11.	C47290	Lakshmi maran.S	43/F	0.3	0.4	12	31	17	34	241	186
12.	C87533	Gnanavalli.P	40/F	0.4	0.5	20	13	21	15	196	194
13.	C53634	Bhavani.V	35/F	0.7	0.7	19	13	20	14	145	200
14.	C52991	Sangeetha.R	34/F	0.5	0.6	28	22	15	25	198	156
15.	C48506	Christilla.K	32/F	0.5	0.5	19	14	12	16	166	136
16.	C87390	Banumathy.R	38/F	0.4	0.5	17	12	18	14	176	151
17.	C73700	Kalavathy.C	56/F	0.6	0.7	14	20	15	22	166	170
18.	B12088	Selvakumar.R	41/M	0.5	0.9	16	20	17	21	180	190
19.	C67303	Ganesh.R	23/M	0.6	0.5	20	25	21	26	146	167
20.	C53286	Alamelu.M	50/F	0.5	0.6	12	14	14	16	138	189

LABARATORY INVESTIGATIONS BEFORE AND AFTER TREATMENT

IP-PATIENTS

S.No	IP No	NAME	AGE/ SEX	Total bilirubin		SGOT		SGPT		Alkaline phosphatase	
				BT	AT	BT	AT	BT	AT	BT	AT
21.	4008	Rani.H	24/F	0.6	0.4	33	12	34	15	216	151
22.	4010	Latha.R	40/F	0.4	0.4	16	15	18	17	199	135
23.	4984	Kaviyarasu.R	22/M	0.4	0.5	10	11	12	14	175	152
24.	4031	Gowri.S	46/F	0.5	0.4	16	26	18	29	194	197
25.	4032	Devi.V	60/F	0.6	0.6	39	23	15	25	226	148
26.	5018	Deva prabhu.A	23/M	0.2	0.2	13	13	14	15	152	166
27.	4057	Karpagam.D	45/F	0.4	0.4	16	12	17	14	160	149
28.	5019	Ekambaram.V	43/M	0.5	0.4	26	16	20	18	159	154
29.	4066	Durgadevi.D	28/F	0.6	0.8	16	18	17	19	165	150
30.	4081	Padmini.K	39/F	0.4	0.5	41	42	20	31	198	193
31.	4084	Padma.S	50/F	0.4	0.3	22	26	24	20	160	170
32.	4090	Bhuvaneswari.N	55/F	0.6	0.5	11	10	12	11	136	166
33.	4093	Boomadevi.S	34/F	0.5	0.4	11	15	12	17	162	181
34.	4111	Mallini.M	38/F	0.5	0.5	17	16	19	18	150	172
35.	4128	Manonmani.P	57/F	0.5	0.6	16	22	17	24	151	193
36.	4136	Sundari.B	55/F	0.5	0.7	13	18	14	20	145	166
37.	4166	Vanitha.R	25/F	0.4	0.5	15	20	16	18	160	171
38.	4173	Rajammal.V	46/F	0.4	0.6	38	32	28	29	190	210
39.	5118	Ragavel.S	47/M	0.4	0.6	29	30	30	35	176	150
40	4183	Jayanthi..S	52/F	0.6	0.4	13	15	15	18	183	200

LABARATORY INVESTIGATIONS BEFORE AND AFTER TREATMENT

OP-PATIENTS

S.No	OP No	NAME	AGE/ SEX	Uric acid		Calcium		Phosphorus	
				BT	AT	BT	AT	BT	AT
1.	C76203	Vikneswari.A	31/F	4.9	3.0	10.1	10.7	2.3	3.0
2.	C71572	Maheshwari.D	50/F	6.3	6.1	9.5	10.0	2.5	2.9
3.	C39854	Lalitha.S	47/F	5.3	4.6	11.6	11.0	3.2	2.9
4.	C75158	Dhileep kumar.S	50/M	5.4	4.4	10.2	10.4	2.8	3.0
5.	C82483	Malarvizhi.N	50/F	4.0	3.8	9.5	9.6	2.5	3.0
6.	C67099	Valarmathi.K	51/F	3.2	3.1	10.3	10.6	3.1	2.9
7.	C65503	Jayanthi.G	42/F	5.0	3.7	10.0	9.8	3.0	2.7
8.	C87033	Revathy.M	50/F	4.2	4.9	10.0	10.5	3.0	3.1
9.	C66185	Gajalakshmi.A	51/F	5.2	0.5	10.6	10.6	3.1	3.0
10.	B95982	Shantha kumari.K	31/F	5.0	3.0	10.0	10.8	3.4	2.9
11.	C47290	Lakshmi maran.S	43/F	5.2	2.9	10.6	11.0	3.0	3.2
12.	C87533	Gnanavalli.P	40/F	5.5	5.1	10.6	10.1	3.4	2.2
13.	C53634	Bhavani.V	35/F	3.6	3.5	10.5	10.9	3.5	3.1
14.	C52991	Sangeetha.R	34/F	4.3	3.0	10.6	10.1	3.4	3.0
15.	C48506	Christilla.K	32/F	3.0	6.0	10.1	10.8	3.9	3.1
16.	C87390	Banumathy.R	38/F	4.2	3.4	11.2	10.0	3.1	2.7
17.	C73700	Kalavathy.C	56/F	3.2	3.9	10.9	10.5	3.2	3.5
18.	B12088	Selvakumar.R	41/M	6.9	7.1	10.2	10.8	3.2	4.0
19.	C67303	Ganesh.R	23/M	5.2	6.5	10.9	9.6	3.0	3.0
20.	C53286	Alamelu.M	50/F	3.4	3.9	9.9	8.7	2.8	3.0

LABARATORY INVESTIGATIONS BEFORE AND AFTER TREATMENT

IP-PATIENTS

S.No	IP No	NAME	AGE/ SEX	Uric acid		Calcium		Phosphorus	
				BT	AT	BT	AT	BT	AT
21.	4008	Rani.H	24/F	5.1	3.0	10.0	10.7	3.0	2.9
22.	4010	Latha.R	40/F	5.2	4.5	10.6	10.6	2.9	3.2
23.	4984	Kaviyarasu.R	22/M	4.9	3.6	11.6	10.1	3.0	2.9
24.	4031	Gowri.S	46/F	4.2	3.0	10.6	10.6	2.9	3.2
25.	4032	Devi.V	60/F	4.5	6.6	10.2	10.1	3.1	2.7
26.	5018	Deva prabhu.A	23/M	6.0	5.6	10.4	10.1	3.0	2.7
27.	4057	Karpagam.D	45/F	3.7	4.0	10.9	10.6	3.9	3.1
28.	5019	Ekambaram.V	43/M	4.2	5.0	10.1	11.0	2.9	3.2
29.	4066	Durgadevi.D	28/F	6.4	6.1	10.2	10.8	3.0	3.2
30.	4081	Padmini.K	39/F	7.5	6.3	11.5	10.5	3.2	3.2
31.	4084	Padma.S	50/F	4.0	3.9	10.6	10.8	3.0	2.9
32.	4090	Bhuvaneswari.N	55/F	5.2	3.0	10.5	11.0	3.1	3.2
33.	4093	Boomadevi.S	34/F	4.1	3.1	10.1	10.7	3.7	3.2
34.	4111	Mallini.M	38/F	3.4	3.4	10.0	9.8	3.0	3.1
35.	4128	Manonmani.P	57/F	4.8	4.3	11.0	10.5	3.0	3.1
36.	4136	Sundari.B	55/F	5.3	5.2	10.1	10.0	3.0	2.7
37.	4166	Vanitha.R	25/F	3.7	3.9	9.9	10.2	2.8	3.1
38.	4173	Rajammal.V	46/F	3.2	3.9	10.5	10.1	3.1	2.9
39.	5118	Ragavel.S	47/M	4.2	4.5	10.2	10.1	4.0	3.9
40	4183	Jayanthi..S	52/F	3.0	3.7	10.7	10.2	3.0	3.5

LABARATORY INVESTIGATIONS BEFORE AND AFTER TREATMENT

OP-PATIENTS

S.No	OP No	NAME	AGE/ SEX	RA factor		ASO titre		CRP	
				BT	AT	BT	AT	BT	AT
1.	C76203	Vikneswari.A	31/F	-ve	-ve	-ve	-ve	-ve	+ve
2.	C71572	Maheshwari.D	50/F	-ve	-ve	-ve	-ve	-ve	-ve
3.	C39854	Lalitha.S	47/F	-ve	-ve	-ve	-ve	-ve	-ve
4.	C75158	Dhileep kumar.S	50/M	-ve	-ve	-ve	-ve	+ve	+ve
5.	C82483	Malarvizhi.N	50/F	+ve	+ve	-ve	-ve	+ve	+ve
6.	C67099	Valarmathi.K	51/F	-ve	-ve	-ve	-ve	+ve	+ve
7.	C65503	Jayanthi.G	42/F	+ve	+ve	-ve	-ve	+ve	+ve
8.	C87033	Revathy.M	50/F	+ve	+ve	-ve	-ve	-ve	-ve
9.	C66185	Gajalakshmi.A	51/F	+ve	+ve	-ve	-ve	-ve	+ve
10.	B95982	Shantha kumari.K	31/F	-ve	-ve	-ve	-ve	-ve	-ve
11.	C47290	Lakshmi maran.S	43/F	-ve	-ve	-ve	-ve	-ve	+ve
12.	C87533	Gnanavalli.P	40/F	-ve	-ve	-ve	-ve	+ve	+ve
13.	C53634	Bhavani.V	35/F	-ve	-ve	-ve	-ve	-ve	-ve
14.	C52991	Sangeetha.R	34/F	-ve	-ve	-ve	-ve	-ve	-ve
15.	C48506	Christilla.K	32/F	-ve	-ve	-ve	-ve	+ve	+ve
16.	C87390	Banumathy.R	38/F	-ve	-ve	-ve	-ve	-ve	-ve
17.	C73700	Kalavathy.C	56/F	+ve	-ve	-ve	-ve	-ve	-ve
18.	B12088	Selvakumar.R	41/M	+ve	+ve	-ve	-ve	+ve	-ve
19.	C67303	Ganesh.R	23/M	-ve	-ve	-ve	-ve	+ve	-ve
20.	C53286	Alamelu.M	50/F	-ve	-ve	-ve	-ve	-ve	+ve

LABARATORY INVESTIGATIONS BEFORE AND AFTER TREATMENT

IP-PATIENTS

S.No	IP No	NAME	AGE/ SEX	RA factor		ASO titre		CRP	
				BT	AT	BT	AT	BT	AT
21.	4008	Rani.H	24/F	+ve	+ve	-ve	-ve	+ve	+ve
22.	4010	Latha.R	40/F	+ve	+ve	-ve	-ve	+ve	+ve
23.	4984	Kaviyarasu.R	22/M	-ve	-ve	-ve	-ve	+ve	+ve
24.	4031	Gowri.S	46/F	+ve	+ve	-ve	-ve	+ve	+ve
25.	4032	Devi.V	60/F	+ve	+ve	-ve	-ve	-ve	-ve
26.	5018	Deva prabhu.A	23/M	+ve	-ve	+ve	-ve	-ve	-ve
27.	4057	Karpagam.D	45/F	+ve	+ve	-ve	-ve	-ve	-ve
28.	5019	Ekambaram.V	43/M	-ve	-ve	-ve	-ve	-ve	-ve
29.	4066	Durgadevi.D	28/F	-ve	-ve	-ve	-ve	+ve	+ve
30.	4081	Padmini.K	39/F	+ve	+ve	-ve	-ve	+ve	-ve
31.	4084	Padma.S	50/F	+ve	+ve	-ve	-ve	+ve	+ve
32.	4090	Bhuvaneswari.N	55/F	-ve	-ve	-ve	-ve	+ve	-ve
33.	4093	Boomadevi.S	34/F	+ve	+ve	-ve	-ve	+ve	+ve
34.	4111	Mallini.M	38/F	-ve	-ve	-ve	-ve	-ve	+ve
35.	4128	Manonmani.P	57/F	-ve	-ve	-ve	-ve	-ve	-ve
36.	4136	Sundari.B	55/F	-ve	-ve	-ve	-ve	+ve	+ve
37.	4166	Vanitha.R	25/F	-ve	-ve	-ve	-ve	+ve	-ve
38.	4173	Rajammal.V	46/F	-ve	-ve	-ve	-ve	+ve	+ve
39.	5118	Ragavel.S	47/M	+ve	+ve	-ve	-ve	+ve	+ve
40	4183	Jayanthi..S	52/F	-ve	-ve	-ve	-ve	-ve	-ve

LABARATORY INVESTIGATIONS BEFORE AND AFTER TREATMENT

OP-PATIENTS

S. No	OP No	NAME	AGE/ SEX	URINE SUGER (F)		URINE SUGER (PP)		ALBUMIN		DEPOSITS			
										Epithelial cells		Pus cells	
				BT	AT	BT	AT	BT	AT	BT	AT	BT	AT
1.	C76203	Vikneswari.A	31/F	nil	nil	nil	nil	nil	nil	2-4	2-4	2-4	2-4
2.	C71572	Maheshwari.D	50/F	nil	nil	nil	nil	nil	nil	4-5	4-5	2-4	2-4
3.	C39854	Lalitha.S	47/F	nil	nil	nil	nil	nil	nil	2-4	2-4	2-4	2-3
4.	C75158	Dhileep kumar.S	50/M	nil	nil	nil	nil	nil	nil	2-4	2-4	1-2	1-2
5.	C82483	Malarvizhi.N	50/F	nil	nil	nil	nil	nil	nil	6-8	2-4	4-6	2-4
6.	C67099	Valarmathi.K	51/F	nil	nil	nil	nil	nil	nil	3-5	2-3	3-5	2-3
7.	C65503	Jayanthi.G	42/F	nil	nil	nil	nil	nil	nil	1-2	1-2	2-4	2-4
8.	C87033	Revathy.M	50/F	nil	nil	nil	nil	nil	nil	3-5	3-5	3-5	2-4
9.	C66185	Gajalakshmi.A	51/F	nil	nil	nil	nil	nil	nil	2-4	2-4	2-4	2-4
10.	B95982	Shantha kumari.K	31/F	nil	nil	nil	nil	nil	nil	3-5	1-2	3-5	0-1
11.	C47290	Lakshmi maran.S	43/F	nil	nil	nil	nil	nil	nil	4-5	4-5	4-5	3-4
12.	C87533	Gnanavalli.P	40/F	nil	nil	nil	nil	nil	nil	2-4	1-2	1-3	2-4
13.	C53634	Bhavani.V	35/F	nil	nil	nil	nil	nil	nil	1-2	2-4	1-2	2-4
14.	C52991	Sangeetha.R	34/F	nil	nil	nil	nil	nil	nil	2-3	2-3	2-4	2-4
15.	C48506	Christilla.K	32/F	nil	nil	nil	nil	nil	nil	2-4	0-1	1-2	1-2
16.	C87390	Banumathy.R	38/F	nil	nil	nil	nil	nil	nil	8-10	1-2	4-6	2-3
17.	C73700	Kalavathy.C	56/F	nil	nil	nil	nil	nil	nil	2-4	1-2	2-4	1-2
18.	B12088	Selvakumar.R	41/M	nil	nil	nil	nil	nil	nil	1-2	1-2	1-2	1-2
19.	C67303	Ganesh.R	23/M	nil	nil	nil	nil	nil	nil	4-6	8-10	4-6	8-10
20.	C53286	Alamelu.M	50/F	nil	nil	nil	nil	nil	nil	2-4	2-4	2-4	2-4

LABARATORY INVESTIGATIONS BEFORE AND AFTER TREATMENT

IP-PATIENTS

S. No	IP No	NAME	AGE/ SEX	URINE SUGER (F)		URINE SUGER (PP)		ALBUMIN		DEPOSITS			
										Epithelial cells		Pus cells	
				BT	AT	BT	AT	BT	AT	BT	AT	BT	AT
21.	4008	Rani.H	24/F	nil	nil	nil	nil	nil	nil	2-4	2-4	2-4	2-4
22.	4010	Latha.R	40/F	nil	nil	nil	nil	nil	nil	2-4	2-3	2-4	4-6
23.	4984	Kaviyarasu.R	22/M	nil	nil	nil	nil	nil	nil	1-2	1-2	1-2	1-2
24.	4031	Gowri.S	46/F	nil	nil	nil	nil	nil	nil	2-4	2-3	1-2	1-2
25.	4032	Devi.V	60/F	nil	nil	nil	nil	nil	nil	2-5	2-4	2-4	2-3
26.	5018	Deva prabhu.A	23/M	nil	nil	nil	nil	nil	nil	3-5	4-5	4-5	1-2
27.	4057	Karpagam.D	45/F	nil	nil	nil	nil	nil	nil	2-4	2-3	2-4	1-2
28.	5019	Ekambaram.V	43/M	nil	nil	nil	nil	nil	nil	4-5	2-4	2-3	2-4
29.	4066	Durgadevi.D	28/F	nil	nil	nil	nil	nil	nil	1-2	1-2	2-4	2-4
30.	4081	Padmini.K	39/F	nil	nil	nil	nil	nil	nil	2-4	2-4	1-3	2-4
31.	4084	Padma.S	50/F	nil	nil	nil	nil	nil	nil	3-6	1-2	3-6	1-2
32.	4090	Bhuvaneswari.N	55/F	nil	nil	nil	nil	nil	nil	1-2	2-3	1-2	2-2
33.	4093	Boomadevi.S	34/F	nil	nil	nil	nil	nil	nil	2-5	5-8	2-4	4-5
34.	4111	Mallini.M	38/F	nil	nil	nil	nil	nil	nil	8-10	3-5	6-8	2-4
35.	4128	Manonmani.P	57/F	nil	nil	nil	nil	nil	nil	3-4	2-3	2-6	1-2
36.	4136	Sundari.B	55/F	nil	nil	nil	nil	nil	nil	3-5	2-4	3-6	3-4
37.	4166	Vanitha.R	25/F	nil	nil	nil	nil	nil	nil	3-6	2-3	2-6	4-5
38.	4173	Rajammal.V	46/F	nil	nil	nil	nil	nil	nil	4-5	2-4	5-7	6-7
39.	5118	Ragavel.S	47/M	nil	nil	nil	nil	nil	nil	5-6	1-2	8-10	1-2
40	4183	Jayanthi..S	52/F	nil	nil	nil	nil	nil	nil	1-2	2-3	1-2	1-2

CLINICAL IMPROVEMENT - OP CASES

S. No	O.P NO	NAME	AGE/ SEX	DOA	DURATION OF ILLNESS	DAYS	RESULT
1.	C76203	Vikneswari.A	31/F	24.7.12	7 Month	48	Good
2.	C71572	Maheshwari.D	50/F	24.7.12	9 Month	48	Good
3.	C39854	Lalitha.S	47/F	26.7.12	8 Month	48	Good
4.	C75158	Dhileep kumar.S	50/M	27.7.12	5 Month	48	Good
5.	C82483	Malarvizhi.N	50/F	27.7.12	2 Years	48	Good
6.	C67099	Valarmathi.K	51/F	27.7.12	7 Years	48	Good
7.	C65503	Jayanthi.G	42/F	28.7.12	5 Years	48	Good
8.	C87033	Revathy.M	50/F	29.7.12	4 Years	48	Good
9.	C66185	Gajalakshmi.A	51/F	1.8.12	2 Years	48	Moderate
10.	B95982	Shantha kumari.K	31/F	1.8.12	4 Years	48	Good
11.	C47290	Lakshmi maran.S	43/F	1.8.12	4 Years	48	Good
12.	C87533	Gnanavalli.P	40/F	1.8.12	4 Years	48	Good
13.	C53634	Bhavani.V	35/F	1.8.12	5 Years	48	Good
14.	C52991	Sangeetha.R	34/F	2.8.12	10 Years	48	Mild
15.	C48506	Christilla.K	32/F	5.8.12	3 Years	48	Good
16.	C87390	Banumathy.R	38/F	6.8.12	4 Years	48	Good
17.	C73700	Kalavathy.C	56/F	6.8.12	4 Years	48	Good
18.	B12088	Selvakumar.R	41/M	7.8.12	3 Years	48	Moderate
19.	C67303	Ganesh.R	23/M	7.8.12	1 Year	48	Moderate
20.	C53286	Alamelu.M	50/F	10.8.12	9 Years	48	Good

CLINICAL IMPROVEMENT - IP CASES

S. No	I.P NO	NAME	AGE/ SEX	DOA	DURATION OF ILLNESS	DAYS	RESULT
21	4008	Rani.H	24/F	27.7.12	8 Months	48	Mild
22	4010	Latha.R	40/F	28.7.12	1 Year	48	Good
23	4984	Kaviyarasu.R	22/M	30.7.12	7 Months	48	Moderate
24	4031	Gowri.S	46/F	1.8.12	5 Years	48	No
25	4032	Devi.V	60/F	1.8.12	6 Years	48	Moderate
26	5018	Deva prabhu.A	23/M	8.8.12	1 Year	48	Good
27	4057	Karpagam.D	45/F	9.8.12	7 Months	48	Good
28	5019	Ekambaram.V	43/M	9.8.12	10 Years	48	Good
29	4066	Durgadevi.D	28/F	11.8.12	3 Years	48	Good
30	4081	Padmini.K	39/F	17.8.12	2 Years	48	Good
31	4084	Padma.S	50/F	18.8.12	8 Months	48	No
32	4090	Bhuvaneswari.N	55/F	21.8.12	3 Months	48	Good
33	4093	Boomadevi.S	34/F	21.8.12	4 Years	48	Good
34	4111	Mallini.M	38/F	24.8.12	1 year	48	Good
35	4128	Manonmani.P	57/F	28.8.12	1 year	48	Good
36	4136	Sundari.B	55/F	29.8.12	4 Years	48	Good
37	4166	Vanitha.R	25/F	8.9.12	1 Year	48	Good
38	4173	Rajammal.V	46/F	10.9.12	2 Months	48	No
39	5118	Ragavel.S	47/M	11.9.12	3 Months	48	Moderate
40	4183	Jayanthi..S	52/F	13.9.12	1 Year	48	Mild

PAIN SCORE – OP PATIENTS

S.No	OP No	NAME	AGE/ SEX	PAIN SCORE		GRADING	
				BT	AT	BT	AT
1.	C76203	Vikneswari.A	31/F	8	0	G3	G1
2.	C71572	Maheshwari.D	50/F	7	0	G2	G1
3.	C39854	Lalitha.S	47/F	5	1	G3	G1
4.	C75158	Dhileep kumar.S	50/M	8	2	G2	G1
5.	C82483	Malarvizhi.N	50/F	6	0	G2	G1
6.	C67099	Valarmathi.K	51/F	8	3	G3	G1
7.	C65503	Jayanthi.G	42/F	8	2	G2	G1
8.	C87033	Revathy.M	50/F	5	2	G3	G1
9.	C66185	Gajalakshmi.A	51/F	7	5	G2	G2
10.	B95982	Shantha kumari.K	31/F	4	2	G2	G1
11.	C47290	Lakshmi maran.S	43/F	8	3	G3	G2
12.	C87533	Gnanavalli.P	40/F	3	1	G2	G1
13.	C53634	Bhavani.V	35/F	4	0	G3	G1
14.	C52991	Sangeetha.R	34/F	8	2	G3	G2
15.	C48506	Christilla.K	32/F	7	3	G2	G2
16.	C87390	Banumathy.R	38/F	9	2	G1	G1
17.	C73700	Kalavathy.C	56/F	7	3	G2	G1
18.	B12088	Selvakumar.R	41/M	8	5	G3	G2
19.	C67303	Ganesh.R	23/M	5	2	G2	G1
20.	C53286	Alamelu.M	50/F	9	0	G2	G1

PAIN SCORE – IP PATIENTS

S.No	IP No	NAME	AGE/ SEX	PAIN SCORE		GRADING	
				BT	AT	BT	AT
21	4008	Rani.H	24/F	7	3	G3	G2
22	4010	Latha.R	40/F	8	0	G2	G1
23	4984	Kaviyarasu.R	22/M	9	4	G3	G1
24	4031	Gowri.S	46/F	9	8	G3	G3
25	4032	Devi.V	60/F	7	4	G2	G1
26	5018	Deva prabhu.A	23/M	7	3	G3	G1
27	4057	Karpagam.D	45/F	8	0	G2	G1
28	5019	Ekambaram.V	43/M	7	2	G3	G1
29	4066	Durgadevi.D	28/F	5	1	G2	G1
30	4081	Padmini.K	39/F	6	3	G2	G2
31	4084	Padma.S	50/F	8	7	G3	G3
32	4090	Bhuvaneswari.N	55/F	7	2	G2	G1
33	4093	Boomadevi.S	34/F	5	3	G1	G1
34	4111	Mallini.M	38/F	8	1	G2	G2
35	4128	Manonmani.P	57/F	4	0	G2	G1
36	4136	Sundari.B	55/F	2	0	G3	G1
37	4166	Vanitha.R	25/F	8	2	G3	G1
38	4173	Rajammal.V	46/F	8	7	G3	G3
39	5118	Ragavel.S	47/M	9	2	G3	G2
40	4183	Jayanthi..S	52/F	5	3	G2	G1

VARMAM TREATMENT ALONG WITH THE TRIAL DRUG

IP PATIENTS

S.No	IP No	NAME	AGE/ SEX	PAIN SCORE		GRADING		RESULT
				BT	AT	BT	AT	
1.	4010	Latha.R	40/F	8	0	G3	G1	Good
2.	4057	Karpagam.D	45/F	8	0	G2	G1	Good
3.	5019	Ekambaram.V	43/M	7	2	G3	G1	Good
4.	4066	Durgadevi.D	28/F	5	1	G2	G1	Good
5.	4081	Padmini.K	39/F	6	3	G2	G1	Good
6.	4090	Bhuvaneswari.N	55/F	7	2	G3	G1	Good
7.	4111	Mallini.M	38/F	8	1	G2	G1	Good
8.	4128	Manonmani.P	57/F	4	0	G3	G1	Good
9.	4136	Sundari.B	55/F	2	0	G2	G2	Good
10.	4166	Vanitha.R	25/F	8	2	G2	G1	Good

BIO -CHEMICAL ANALYSIS OF AMIRTHARASA MATHIRAI ANALYSED AT NATIONAL INSTITUTE OF SIDDHA

S.No	EXPERIMENT	OBSERVATION	INFERENCE
1.	Physical Appearance of sample	Black red in colour	
2.	**Solubility:** a. A little (500mg) of the sample is shaken well with distilled water. b. A little (500mg) of the sample is shaken well with con. HCl/ Con. H_2So_4	Sparingly soluble	Presence of Silicate
3.	**Action of Heat:** A small amount (500mg) of the sample is taken in a dry test tube and heated gently at first and then strong.	White fumes evolved	Presence of Carbonate
4.	**Flame Test:** A small amount (500mg) of the sample is made into a paste with con. HCl in a watch glass and introduced into non-luminous part of the Bunsen flame.	No Bluish green flame appeared.	Absence of Copper
5.	**Ash Tests:** A filter paper is soaked into a mixture of sample and dil. cobalt nitrate solution and introduced into the Bunsen flame and ignited	No Yellow colour flame	Absence of sodium

Preparation of Extract:

5gm of Amirtharasa mathirai is weighed accurately and placed in a 250ml clean beaker and added with 50ml of distilled water. Then it is boiled well for about 10 minutes. Then it is cooled and filtered in a 100ml volumetric flask and made up to 100ml with distilled water.

S.No	EXPERIMENT	OBSERVATION	INFERENCE
	I. Test For Acid Radicals		
1.	**Test For Sulphate:** 2ml of the above prepared extract is taken in a test tube to this added 2ml of 4% dil ammonium oxalate solution.	No Cloudy appearance present	Absent of Sulphate
2.	**Test For Chloride:** 2ml of the above prepared extracts is added with 2ml of dil-HCl is added until the effervescence ceases off..	Cloudy appearance present	Presence of Chloride
3.	**Test For Phosphate:** 2ml of the extract is treated with 2ml of dil.ammonium molybdate solution and 2ml of con.HNo3	No cloudy yellow appearance present	Absent of Phosphate
4.	**Test For Carbonate:** 2ml of the extract is treated with 2mldil. magnesium sulphate solution	No Cloudy appearance present	Absent of Carbonate
C	**Test For Nitrate:** 1gm of the substance is heated with copper turning and con.H2So4 and viewed the test tube vertically down.	No Brown gas is evolved	Absence of Nitrate
6.	**Test For Sulphide:** 1gm of the substance is treated with 2ml of con. HCL	Rotten Egg Smelling gas evolved	Presence of Sulphide
7.	**Test For Fluoride & Oxalate:** 2ml of extract is added with 2ml of dil. Acetic acid & 2ml dil. calcium chloride solution & heated**.**	No Cloudy appearance	Absence of fluoride and oxalate

8.	**Test For Nitrite:** 3drops of the extract is placed on a filter paper, on that-2 drops of dil.acetic acid and 2 drops of dil. Benzidine solution is placed.	No Characteristic changes	Absence of Nitrite
9.	**Test For Borate:** 2 Pinches (50mg) of the substance is made into paste by using dil.sulphuric acid and alcohol (95%) and introduced into the blue flame.	Bluish green colour flame not appeared	Absence of borate
	II. Test For Basic Radicals		
1.	**Test For Lead:** 2ml of the extract is added with 2ml of dil.potassium iodine solution.	NoYellow Precipitate is obtained.	Absence of Lead
2.	**Test For Copper:** **a.** One pinch(50mg) of substance is made into paste with con. HClin a watch glass and introduced into the non-luminuous part of the flame.	No Blue colour flame No Blue colour precipitate formed.	Absence of copper
3.	**Test For Aluminium:** To the 2ml of extract dil.sodium hydroxide is added in 5 drops to excess.	No characteristic changes	Absence of aluminium
4.	**Test For Iron:** a.To the 2ml of extract add 2ml of dil.ammonium solution b.To the 2ml of extract 2ml thiocyanate solution and 2ml of con HNo3 is added	Red colour appeared	Presence of Iron

5.	**Test For Zinc:** To 2ml of the extract dil.sodium hydroxide solution is added in 5 drops to excess and dil.ammonium chloride is added.	White precipitate is not formed	Absence of Zinc
6.	**Test For Calcium:** 2ml of the extract is added with 2ml of 4% dil.ammonium oxalate solution	No Cloudy appearance and white precipitate is obtained	Absence of calcium
7.	**Test For Magnesium:** To 2ml of extract dil.sodium hydroxide solution is added in drops to excess.	White precipitate is obtained	Presence of Magnesium
8.	**Test For Ammonium:** To 2ml of extract 1 ml of Nessler's reagent and excess of dil.sodium hydroxide solution are added.	No Brown colour appeared	Absence of ammonium
9.	**Test For Potassium:** A pinch (25mg) of substance is treated of with 2ml of dil.sodium nitrite solution and then treated with 2ml of dil.cobalt nitrate in 30% dil.glacial acetic acid.	No Yellowish precipitate is obtained.	Absence of Potassium
10.	**Test For Sodium**: 2 pinches (50mg) of the substance is made into paste by using HCl and introduced into the blue flame of Bunsen burner.	Yellow colour flame appeared	Presence of Sodium
11.	**Test For Mercury**: 2ml of the extract is treated with		

	2ml of dil.sodium hydroxide solution.	No yellow precipitate is obtained	Absence of Mercury
12.	**Test For Arsenic:** 2ml of the extract is treated with 2ml of dil.sodium hydroxide solution.	No brownish red precipitate is obtained	Absence of Arsenic
	III. Miscellaneous		
1.	**Test For Starch:** 2ml of extract is treated with weak dil.Iodine solution	No Blue colour developed	Absence of starch
2.	**Test For Reducing Sugar:** 5ml of Benedict's qualitative solution is taken in a test tube and allowed to boil for 2 minutes and added 8 to 10 drops of the extract and again boil it for 2 minutes. The colour changes are noted.	No Brick red colour is developed	Absence of reducing sugar
3.	**Test For The Alkaloids**: a)2ml of the extract is treated with 2ml of dil.potassium lodide solution. b) 2ml of the extract is treated with 2ml of dil.picric acid. c) 2ml of the extract is treated with 2ml of dil.phosphotungstic acid.	Red colour developed Yellow colour developed White precipitate developed	Presence of Alkaloid
4.	**Test For Tannic Acid:** 2ml of extract is treated with 2ml of dil.ferric chloride solution	No black precipitate is obtained	Absence of Tannic acid

5.	**Test For Unsaturated Compound:** To the 2ml of extract 2ml of dil.Potassium permanganate solution is added.	Potassium permanganate is not decolourised	Absence of unsaturated compound
6.	**Test For Amino Acid:** 2 drops of the extract is placed on a filter paper and dried well. 20ml of Biurette reagent is added**.**	No Violet colour developed	Absenc of amino acids
7.	**Test For Type Of Compound:** 2ml of the extract is treated with 2 ml of dil.ferric chloride solution.	No green colour Developed No red colour developed No violet colour developed No blue colour developed	Absence of oxy quinole pinephrine and pyro catechol. Anti pyrine, Aliphatic amino acids and meconic acid are absent Apomorphine salicylate and Resorcinol are absent Morphine, Phenol cresol and hydrouinoneare absent

Preliminary Qualitative Phyto chemical tests procedure and interpretation of results

S.NO	CONSITUENTS	INFERENCE
1.	**Silicate**	Present
2.	**Carbonate**	Present
3.	**Chloride**	Present
4.	**Sulphide**	Present
5.	**Iron**	Present
6.	**Alkaloids**	Present

7.	**Copper**	Absent
8.	**Sodium**	Absent
9.	**Sulphate**	Absent
10.	**Phospate**	Absent
11.	**Nitrate**	Absent
12.	**Oxalate**	Absent
13.	**Fluoride**	Absent
14.	**Borate**	Absent
15.	**Lead**	Absent
16.	**Aluminium**	Absent
17.	**Zinc**	Absent
18.	**Calcium**	Absent
19.	**Magnesium**	Absent
20.	**Ammonium**	Absent
21.	**Potassium**	Absent
22.	**Mercury**	Absent
23.	**Arsenic**	Absent
24.	**Starch**	Absent
25.	**Reducing sugar**	Absent
26.	**Tannic Acid**	Absent
27.	**Unsaturated compound**	Absent
28.	**Amino Acid**	Absent
29.	**Type of compounds**	Absent

DISCUSSION

The main aim of the treatment was to study the Therapeutic effect of the drug Amirtharasa Mathirai to reduce pain and restricted joint movements in the disease Uthira Vatha Suronitham. The clinical features of Uthiravatha Suronitham can be correlated to Rheumatoid Arthritis in modern science. Rheumatoid Arthritis is a chronic inflammatory, destructive, and deforming symmetrical poly arthritis associated with symmetrical involvement of joints.

Uthiravatha Suronitham is a Vatha disease in which, there occur a derangement of Vatha thathu and Pitha thathu.

Vatha thathu is responsible for the functioning of the Udal thathukal uniformly. Hence derangement of the Vatha kutram leads to impairment in Udal thathukal and in turn produces symptoms like pricking pain, body ache, difficulty in flexion and extension of joints, mental distress etc.

The drugs which possess anti-vatha property as mentioned in Siddha literature were selected and the trial drugs were prepared by the Author in the Gunapadam practical laboratory of National Institute of Siddha, after getting proper authentication of raw drugs from the Medicinal botany department at NIS, Chennai 47, and Chemistry department in Siddha central Research Institute Arumbakkam Chennai 106, under the supervision of the members of the teaching faculty and guided by the Head of the Department of Sirappu Maruthuvam of the National Institute of Siddha, Chennai - 47. The trial drug was prepared by the standard operating procedure as mentioned in the protocol.

The safety of the trial drug usage and standardization of the trial drug through biochemical analysis were also ensured during the study.

The Preclinical toxicity studies (Acute toxicity) for the above said trial drug was conducted at National Institute of Siddha after getting the proper acceptance and permission from the Institutional Animal Ethical Committee. The trial drug was proved to be safe for human beings from the observations made from the study.

The Biochemical qualitative and quantitative analysis were done at the biochemistry lab of NIS and IIT Chennai respectively. It revealed the presence of effective minerals and the existence of the drug molecules at micro level.

The clinical study was conducted with a well defined protocol and a proper proforma after the approval of the Institutional Ethical Committee. After screening patients reporting at the OPD of department of Sirappu Maruthuvam, 40 cases were selected for induction to the trial. Before enrollment into the trial the informed consent was obtained from the patients.

40 patients of both genders were recruited for this study. Among the 40 patients 20 were OPD patients and the remaining 20 were IPD patients. Among the 20 IPD patients 10 Patients received varmam treatment along with the trial drugs. For In-Patients, who were not in a situation to stay in the hospital for a long time, were advised to attend the Out-Patient Department of Sirappu Maruthuvam for further follow- up.

The treatment was aimed at normalizing the deranged thodams and providing relief from symptoms. Before treatment the patients were advised to take Agasthiyar kuzhambu-130 mg with ginger juice in early morning for purgation. The patient was advised to take rest without internal medicine.

The patients were treated with trial drugs Amirtharasa Mathirai twice a day with water and Suronitha Vatha Ennai (external) for 48 days . Patients were instructed to take the medicines regularly advised to follow pathiyam (avoid tamarind, tubers, etc) and advised to avoid cold exposure . Out-Patients were asked to visit the hospital once in 7 days. For Out-Patients the drugs were given for 48 days and the clinical assessment was done on 0^{th} day, 8^{th} day, 15^{th} day, 22^{th} day , 29^{th} day, 36^{th} day, 43^{th} day and 49^{th} day.

After the treatment, the patients were advised to visit the Out-Patient ward of Department of Sirappu Maruthuvam for another 2 months for follow-up. The results observed during the study period were discussed by the author below.

Among the 40 patients selected,

According to the **Gender** the disease was found to be higher in females **(**82.5%) and lower in males (17.5%).

In **Age group** 15% of the affected patients came under the age group between 20-30 years. 27.5 % of the patients fall under the age group between 31-40 years, 37.5 % of them are between 41-50 years and 20 % of them is between 51-60 years.

In my study while seeing **socio-economic status** of the patients the disease was found to be higher in the Low income group 52.5%. lower in the Middle income group 35%.moderate in the high income group12.5%.

In Occupational distribution,31 cases (77.5%) were house wifes, 2 cases(5%) were social worker,1 Cases(2.5%) 1 were Tailor, 5 Cases (12.5%)were coolie, 1 Cases (2.5%) were Lab asst.

In **diet** Non vegetarian (80%) is very higher than the vegetarian (20%).

In **Thinai** 80% of cases were from Neithal and 20% of cases were from marutham illam. As per Siddha literatures; it is mentioned that vaatha diseases are common in Neithal nilam. This study also reveals the majority cases of this disease in Neithal thinai.

In **Paruva Kaalam** (Season) Out of 40 cases 55% cases were taken in Muthuvenil kaalam and 45% cases were taken in Kaarkaalam.

In **Gunam** 70% of cases had Thamo gunam, 27.5% of cases had Raso gunam, 2.5% of cases had Sathuva gunam.

In **Body constitution** Out of 40 cases, 100 % were came under Thontha thegi.

While seeing the **Naadi**, Vatha pitha naadi was found in 8 cases (20%), Pitha vatha naadi was found in 24 cases (60%), Pitha kaba naadi was found in 6 cases (15%), Kaba pitha naadi was found in 2 cases (5%).

In **vatham**, viyaanan and samanan was affected in all cases (100%), 15 cases (37.5%) affected in Abanan, and 2 cases (5%)affected in Devathathan.

Among 40 cases, Saathagam was affected in all 40 cases (100%) , Ranjagam and Prasagam were affected in 20 cases(50%), Analam was affected in 6 cases (15%) .

In Iyam Only santhigam was affected in all the 40 cases.

In **Envagai Thervu** , Naa and sparisam were affected in 50% of patients whereas Vizhi was affected in 62.5% and Malam was affected in 37.5% of patients.

In Neikkuri , Vatha neer was found in 2 cases(5%) , Pitha neer was found in 9 cases (22.5%) and Kaba neer was found in 29 cases (72.5%)**.**

In **Udal thaathukkal** Saram, Oon, Kozhuppu and Enbu were affected in all 40 cases and Senneer was affected in 5 cases only.

In Kanmendrium Kai and Kaal were affected in 100% cases, Eruvai was affected in 37.5% cases.

In **Duration of illness**, about 35% cases had 3-10 yrs of duration, 17.5% cases had 2-3 yrs of duration, 20% cases had 1-2 yrs of duration, 17.5% cases had 6 mon – 1yr of duration and 10% cases had 6 months of duration.

According to the **mode of onset** 12.5% of cases had acute onset of illness, 30% of cases had subacute and 57.5% of cases had chronic onset of illness.

According to the **clinical features** all 100% of cases had pain, swelling, early morning stiffness, warmth, tenderness, and restricted movements .10% cases had fever, 12.5% cases had anorexia, 17.5% cases had deformities, 57.5% cases had polyarthralgia symptoms

Among the **Deformities**, 17.5% of cases had spindle shaped deformity, 10% of cases had hallus valgus derormity, 5% of cases had ulnar deviation and 2.5% of cases had swan neck deformity.

In my study, wrist and MCP joints were involved in 92.5% cases, Knee and PIP joints were involved in 90% , Ankle joint was involved in 87.5% cases, Elbow joint was involved in 85% cases , Lumbosacral joint was involved in 62.5% cases, Cervical vertebrae were involved in 37.5% cases, and Hip joint was involved in 25% cases.

After treatment Out of 40 cases

In my study, **Before treatment** 67.5% of cases had Severe pain, 27.5% of cases had Moderate pain and 5% of cases had Mild pain.

After treatment 7.5% of cases had Severe pain, 10% of cases had Moderate pain, 60% of cases had Mild pain and 22.5%of cases had No pain.

According to the **Restriction**, After the treatment among 40 cases, Restriction was reduced in 70% of cases, Mild restriction was found in 22.5% of cases, Moderate restriction was found in 7.5% of cases.

Overall **Results** are 70% cases showed Good improvement,15% cases showed Moderate improvement, 7.5% cases showed Mild improvement.

Laboratory investigation of blood and urine were done for all 40 cases. There were no significant changes in blood and urine parameters before and after treatment.

Patients treated with Varmam showed very good results since there was marked reduction in the Pain of Uthiravatha Suronitham patients in this clinical trial.

The pain assessment was done in all the 40 patients participated in the trial The mean pain score before treatment is 6.78 after treatment it is reduced to 2.33**.** Hence this study reveals Varmam treatment along with trial medicines is to be very effective in the treatment of Uthiravatha Suronitham.

Varmam treatment along with their internal medicine,

The mean pain score of the 10 patients who received varmam treatment before treatment is 6.6 and after treatment it is reduced to 1.7

The acute toxicity study was conducted for the trial drug Uthiravatha Suronitham in National Institute of Siddha and it showed no abnormal results. Hence the safety of the trial drug was also proved.

SUMMARY

Uthiravatha Suronitham, a type of vatha disease described by Yugi Muni is clinically identical with Rheumatoid Arthritis..It is the most common persistent inflammatory arthritis, occurring throughout the world and in all ethnic groups. The clinical course is prolonged, with intermittent exacerbations and remissions.

The aim of the study was to evaluate the efficacy of Amirtharasa mathirai and Suronithavatha ennai in Uthiravatha Suronitham.

The study was accepted by Institutional screening committee and then approved by the Institutional Ethical Committee (IEC) and the Institutional Animal Ethical Committee (IAEC).

For my study, the 40 cases of Uthiravatha suronitham were diagnosed clinically, based on the inclusion and exclusion criteria in the approved protocol. Out of the 40 cases, 20 cases were admitted and treated with the trial drugs in the In-patient ward and the rest were treated in outpatient department of Sirappu Maruthuvam in Ayothidoss Pandithar Hospital attached to National Institute of Siddha,Tambaram Sanitorium, Chennai - 47.

Among the 20 Ip patients, 10 IP patients were treated by Varmam treatment along with the trial medicine and remaining 30 cases were treated only with the trial drugs for 48 days.

In this study , first the patients were well informed about the study and they were asked to sign the consent form. After signing the consent form, information sheet and diatery advice forms were given to the patients.

The various Siddha methods of examination of the disease were carried out and the data were recorded in the prescribed Proforma for the 40 selected cases.

A day before starting the treatment purgation was given by administering Agasthiyar Kuzhambu– 1 kundri (130 mgs) early morning with Ginger juice to bring the Thirithodam to equilibrium.

From the second day onwards Amirtharasa mathirai - one tablet (130 mgs) twice a day along with water was given internally and Suronitha vatha ennai for external use were given to the patients for 48 days.

During the period of treatment all the patients were put under Pathiyam (specific dietary regimen for the disease).

The prognosis of the patients during each visit was entered and monitored for any adverse drug reactions or poor patient compliance, investigation reports were recorded before and after treatment.

Observation made during the clinical study showed that the trial drug was clinically effective. Out of the 40 cases 28 cases showed good improvement, 6 cases had moderate improvement, 3 cases showed only mild improvement and 3 cases had no improvement.

Acute toxicity study reveals that Amirtharasa mathirai at the dose 4.68mg/animal did not exhibit any mortality in mice. In Necropsy, the organs of the animal such as, Liver, Heart, Lungs, Pancreas, Spleen, Stomach, Intestine, Kidney, Urinary bladder, Uterus all appeared normal.

Therefore it is assumed that the drug is safe for humans.

Bio-chemical analysis revealed that the drug contains Silicate, Carbonate, Sulphide, Chloride, Iron, Alkaloids.

The qualitative and quantitative study on the trial drug conducted at Sophisticated Analytical Instrument Facility (SAIF), IIT, Chennai-36 revealed that the trial drug does not possess any heavy metals like lead, cadmium etc.,

The pain assessment was done in all the 40 patients participated in the trial using the universal pain assessment scale and at the end of the study the results showed, the mean pain score before treatment was 6.78 and after treatment it was reduced to 2.33

Among the 20 IP patients, 10 IP patients were given Varmam treatment along with their internal medicine. The remaining 10 IP patients didn't received varmam treatment. The results are compared at the end of the study. The mean pain score of the 10 patients who received varmam treatment before treatment is 6.6 and after treatment it is reduced to 1.7 Hence varmam treatment along with internal medicine is more effective in the treatment of rheumatoid arthritis

From this clinical trial it could be inferred that Amirtharasa mathirai and Suronitha vatha ennai possess good therapeutic efficacy in Uthiravatha suronitham.

The outcome of the trial medicines were assessed by grading method and the results were as follows:

Good improvement	-	28 patients (70%)
Moderate improvement	-	6 patients (15%)
Mild improvement	-	3 patients (7.5 %)
No improvement	-	3 patients (7.5 %)

CONCLUSION

Acute toxicity study reveals that the trial drug Amirtharasa mathirai is safe. The results of the clinical trial indicate that the trial drugs are clinically effective in Uthiravatha suronitham patients. No adverse effects were reported during the course of treatment and there were no significant variations seen in hepatic and renal studies before and after the treatment.

Hence the trial drugs are considered as safe.

The qualitative and quantitative study on the trial drug revealed that the drug does not contain any heavy metals like lead, cadmium etc. The particle size of the trial drug is 0.25 – 0.5 micron that makes the drug absorption better.

The study shows that about 82.5% of reported patients were women and after treatment most of the patients were comfortable and returned to their daily activity independent of others. Hence if the pain gets reduced in those individuals helping them to do their own daily routine by themselves is itself a big relief for those people.

Hence the study concludes that, the trial drugs are clinically effective in reducing the pain, swelling and restricted movement in Uthiravatha suronitham patients. However further work with large number of patients should be carried out towards finding the ideal dose response.

BIBLIOGRAPHY

- Agathiyar Gunavaagadam
- Agathiyar Kanma Kaandam
- Agasthiyar Mani 4000 ennum Vaithiya Chinthamani Venbaa 4000 second part
- Agathiyar Vaithiya Kaaviyam -1500
- Gunapadam Mooligai Vaguppu
- Gunapadam Thathu Jeeva Vaguppu - Dr.R.Thiyagarajan
- Noi Naadal Noi Mudhal Naadal Thirattu Part I and II – Dr.M.Shanmugavelu
- Pathartha Guna Chinthamani – R.C.Mohan
- Pararasa Segaram
- Sattamuni Gnanam
- Sarakku Sutthi Sei Muraigal –Siddha maruthuva nool veliettu pirivu
- Siddha Maruthuvaanga Surukkam- Dr.K.S.Uthamarayan
- Siddha Maruthuvam (Pothu) –Dr.N.Kuppusamy Muthaliyar
- Siddha Maruthuvam (Sirappu)- Dr.R.Thiyagarajan
- Siddha medicine Volume III (Special areas) – Tamizh valarchi kazhagam
- Siddha priniciples of social and preventive medicine – Dr.G.Durairasan
- Siddha Vaithiya Pathartha Guna Velakkam – C . Kannusamy pillai
- Sigicha Rathina Deepam ennum Vaithiya Nool
- Thaerayar Vaagadam
- Thirukkural
- T.V.Sambasivam Pillai Dictionary, Volume 4, Part I
- Varmam Maruthuvam sirappu - T.Kannan Rajaram
- Varmam Pullikalin Iruppidam
- Varmam Kannadi
- Varmam maruthuvathin adippadaikal - T.Kannan Rajaram
- Vatha Noi Maruthuvam –Dr.S.Chidambarathaanu pillai
- Yugi Munivar Perunool Kaaviyam
- Yugi Vaithiya Chinthamani
- Davidson's priniciples and practice of medicine.
- Essential orthopedics by J.Maheshwari
- Text book of Human Anatomy – T.S.Ranganathan
- Text book of Medicine – P.C.Das and P.K.Das
- Text book of orthopedics and trauma – Kulkarni
- Text book of orthopedics and traumatology – Prof.Mayilvahanan Natarajan
- Text book of orthopedics and traumatology – John Ebnezar
- www.sysindia.com/medical/about siddha.html
- Prevalence of rheumatoid arthritis in adult Indian population, Department of medicine, AIMS, New Delhi.

IAEC PROTOCAL NO: 1248/ac/09/CPCSEA/4-18/2011.

20/12/2011

CERTIFICATE

This is certify that the project title. Preclinical and clinical study on Amirtharase mathirai (Internal medicine) and Surovitha Vatha ennai (external medicine) for the treatment of Uthira Vathe Surovitham (Rheumatoid Arthritis)

has been approved by the IAEC.

Prof. Dr. K. Manickavasakam — **Name of Chairman/Member Secretary IAEC:**

Dr. B. Jayachandran Dave — **Name of CPCSEA nominee:**

Signature with date

Chairman/Member Secretary of IAEC:

CPCSEA nominee:

(Kindly make sure that minutes of the meeting duly signed by all the participants are maintained by Office)

NATIONAL INSTITUTE OF SIDDHA

(An Autonomous Body under Department of AYUSH)
Ministry Of Health & Family Welfare, Government of India

Tambaram Sanatorium, Chennai - 600 047
Tel : 044-22411611 Fax : 044-22381314
E-mail : nischennaisiddha@yahoo.co.in
Website : www.nischennai.org

Name: Dr. S. Kumar Reg. 32102202
Title: Preclinical and clinical study on Amirtha Rasa: maltirai (internal) and Suronitha valha ennai (external) for the
No. treatment of uthira valha suronitham (Rheumatoid Arthritis).
NIS/IEC/2011/3/18 - 24/12/2011

DECSION

Opinion of the Institutional Ethics Committee – Please Check one
✓ Approval _____ Modifications required prior to approval (Please specify one space below) _____ Disapproval K. Manickavasakam (Dr. K. MANICKAVASAKAM) Member secretary Date of review: _____ Signed: V. Subramanian (Please print name) Dr.V.SUBRAMANIAN Chair person (Please delee as appropriate, Chairperson, Secretary)
Modifications needed Modification given to candidate
The research proponent is hereby informed that the Institutional Ethics Committee will require the following: 1. All adverse drug reactions (ADRs) that are both serious and unexpected to be reported promptly to the IEC within 7 working days 2. The progress report to be submitted to the IEC atleast annually 3. Upon completion of the study, a final study status report needs to submitted to the IEC

The Tamil Nadu Dr. M.G.R. Medical University

69, Anna Salai, Guindy, Chennai-600 032

This Certificate is awarded to Dr S.KUMAR

for participating as a ~~Resource Person~~ / Delegate in the VI Workshop on

"Research Methodology & Biostatistics"

for AYUSH Post-Graduates & Researchers
organized by the Department of Siddha
The Tamil Nadu Dr. M.G.R. Medical University
from 12th September 2011 to 16th September 2011

Dr. MAYILVAHANAN NATARAJAN
M.S.Orth. M.Ch.Orth. (L'pool) Ph.D. D.Sc. F.R.C.S. D.Sc. (Hon)^3
VICE CHANCELLOR

Dr. SUDHA SESHAYYAN, M.S.
REGISTRAR (FAC)

Dr. N. KABILAN, M.D. (Siddha)
READER, DEPT. OF SIDDHA

NATIONAL INSTITUTE OF SIDDHA, CHENNAI – 600047

CERTIFICATE OF BOTANICAL AUTHENTICITY

Certified that the following plant drugs used in the Siddha formulation **Amirtharasa Mathirai** (Internal) and **Suronitha Vatha Ennai** (External) for the treatment of **Uthira Vatha Suronitham** (Rheumatoid Arthritis) taken up for Post Graduation Dissertation studies by **Dr.S.KUMAR**, M.D.(S), II year, Department of Sirappu Maruthuvam, 2011-12, are identified and authenticated through Visual inspection / Experience, Education & Training/ Organoleptic characters/ Morphology / Micromorphology / Taxonomical/ Microscopical methods.

Indigofera tinctoria Linn. (Fabaceae), Leaf
Calotropis gigantea (Linn.) R. Br. Ex Ait (Asclepiadaceae), Leaf
Cleome viscosa Linn. (Cleomaceae), Leaf
Vitex negundo Linn. (Verbenaceae), Leaf
Tamarindus indica Linn. (Caesalpiniaceae), Leaf
Trichosanthes bracteata (Lam.) Voigt. (Cucurbitaceae), Leaf
Ricinus communis Linn. (Euphorbiaceae), Seed oil

Certificate No: NIS/MB/60/2012

Date: 14-6-2012

Authorized Signatory

Dr. D. ARAVIND,
M.D.(S),M.Sc.,Medicinal Plants
Asst. Professor in Botany/Pharmacognosy
Dept. of Medicinal Botany,
NATIONAL INSTITUTE OF SIDDHA
(DEPT. OF AYUSH, GOVT. OF INDIA)
Tambaram, Chennai-600 047.

சித்த மருத்துவ மைய ஆராய்ச்சி நிலையம், அரும்பாக்கம், சென்னை - 600 106
सिध्द केन्द्रीय अनुसंधान संस्थान, अरुम्बाक्कम, चेन्नई- 600 106
Siddha Central Research Institute
Arignar Anna Govt. Hospital Campus, Arumbakkam, Chennai-600 106
(Central Council for Research in Siddha, Department of AYUSH,
Ministry of Health & Family Welfare, Govt. of India)
Phone: 044-26214925, Tele Fax: 044-26214809, E.mail: crisiddha@gmail.com, Web: www.crisiddha.tn.nic.in

07.03.2012

CERTIFICATE

Certified that the minerals submitted for identification by Dr. S. Kumar, II year M.D (Siddha), National Institute of Siddha, Tambaram Sanatorium, Chennai-47 are identified as Gandhagam - Sulphur and Rasam - Mercury.

(R.Shakila)
Research Officer (Chemistry)

(K.Meenakshi Sundara Moorthy)
Asst. Director- In charge

Issued to :

Dr.S. Kumar M.D (siddha)
National Institute of Siddha
Tambaram Sanatorium
Chennai – 47.

SARGAM LABORATORY PVT. LTD.
F2, Thiru-Vi-Ka Industrial Estate,
(Phase-III Ekkattuthangal) Guindy, Chennai - 600 032.
Phone : +91 44 - 4967 4000, 4967 4001
Fax : +91 44 - 4967 4001
Email : enquiry@sargamlabs.com
sr@sargamlabs.com
accounts@sargamlabs.com
Website : www.sargamlabs.com

Recognised by BIS, AYUSH
Approved by Drug Controller of India, EIC, APEDA, AGMARK (Export) and FSSAI

TEST REPORT

SUBMITTED SAMPLE

Report Number : M136110
Lab Code No. : PF12-10-357-01

Report Date : 17.10.2012
Page : 1 of 1

Sample Name : Amirtharasa Mathirai

Received on : 15.10.2012
Commenced on: 16.10.2012
Completed on : 16.10.2012

Customer's Reference :Order form dated 15.10.2012

TEST	OBSERVED RESULT
Description	Black colour pellets
Disintegration time	20 minutes 40 seconds

End

Report prepared by: G. Lakshmi

Verified

Authorized Signatory

P. GOPAL
Person In-charge of testing

Terms and Conditions :

* The test results relate only to the items tested. * The test report shall not be reproduced in full or part without the written approval of SLPL. * The test items will not be retained for more than 15 days from the date of issue of test report in the case of perishable items and 3 months in the case of metal samples unless otherwise agreed with the customer or as required by the applicable regulation. * The Laboratory's responsibility under this report is limited to proven willful negligence and will in no case be more than the invoiced amount.

SOPHISTICATED ANALYTICAL INSTRUMENT FACILITY
INDIAN INSTITUTE OF TECHNOLOGY, MADRAS
Chennai - 600 036. INDIA

CERTIFICATE

Certified that herbo-mineral drug **Amirtharasa Mathirai** formulated by **Dr.S.KUMAR** III Year M.D(S) Department of Sirappu Maruthuvam, National Institute of Siddha, Tambaram Chennai-47,were analysed (quantitative) by SEM and ICP Methods at SAIF, IITM, Chennai-36, during October 2012.

Dr. R. MURUGESAN
Scientific Officer Gr.-I
Sophisticated Analytical Instrument Facility
Indian Institute of Technology, Madras
Chennai-600 036

Phone : 91-44-2257 4935 Fax : 91-44-2257 0545, 2257 0509
e-mail : saif@iitm.ac.in http://www.saif.iitm.ac.in

NATIONAL INSTITUTE OF SIDDHA

ACUTE TOXICITY STUDY OF AMIRTHARASA MATHIRAI

[WHO guidelines, 1993]

Principle:

Acute toxicity was carried out in Swiss albino mice with a single exposure of 10 times of the recommended therapeutic dose of test compound the study duration will be 14 days.

Animal species : Swiss albino mice

Age / Weight / Size : 6 weeks. Mice-20-25 gms.

Gender : Both male and female

Number of Animals : Mice: 10

Acclimatization Period : 7 Days

Clinical dose : 260 mg\day

S.No	Group	No of mice
1	Vehicle control (saline)	10 (5 male, 5 female)
2	Toxic dose 10X therapeutic dose (4.68mg)	10 (5 male, 5 female)

Test Animals

Test animals were obtained from the animal laboratory of the King institute, Chennai and stocked at National institute of siddha, Chennai. All the animals were kept under standard environmental condition (27+ or – 2 degree c).The animals had free access to water and standard pellet diet (Sai Durga foods pvt.ltd, Bangalore).The principles of laboratory animal care were followed and the Institutional ethical committee approved the use of animals and the study design. **(1248/ac/09/CPCSEA/February/ 2012)**

Route of administration:

Oral route was selected, because it is the normal route of clinical administration.

Test substance and vehicle

The Amirtharasa mathirai is Black in colour. The test substance is insoluble in water, in order to obtain and ensure the uniformity in drug distribution the drug is dissolved by aqueous Tween 80 solution (10%).

Administration of doses

Amirtharasa mathirai was suspended in aqueous Tween 80 solution (10%), with uniform mixing and it was administered to the groups in a single oral dose .The control groups were received equal volume of the vehicle. The animals were weighed before giving the drug. The dose level was calculated according to body weight, and surface area. Since the clinical dose was 260mg\day it was converted to animal dose (4.68mg) and then administered. The principle of laboratory animal care was followed.

Observations

Observations were made and recorded systematically and continuously observed as per the guideline after substance administration. The animals were monitored for behavioural parameters like

1. Awareness
    - Alertness
    - Visual placing
    - Stereotype
    - Passivity
2. Mood
    - Grooming
    - Restlessness
    - Irritability
    - Fearfulness

3. Motor activity

- Spontaneous activity
- Reactivity
- Touch response
- Pain response.

Animals were observed for body weight and mortality for 14 days. If animals died during the period of study, the animals were sacrificed. At the end of the 14th day all animals were sacrificed and necropsy was done.

Body Weight

Individual weight of animals was determined before the test substance was administered and daily for 14 days. Weight changes were calculated and recorded. At the end of the test, surving animals were weighed and sacrificed.

Results:

Amirtharasa mathirai at the dose 4.68mg/animal did not exhibit any mortality in mice.

No behavior changes were noted for the first 4 hours and for the next 24 hours and throughout the study period of 14 days. No weight reduction was noted before and after the acute study duration. Reflexes were found to be normal before and after the study. All other observations were found to be normal before and after the study. In Necropsy, the organs of the animal such as, Liver, Heart, Lungs, Pancreas, Spleen, Stomach, Intestine, Kidney, Urinary bladder, Uterus all appeared normal.

SOPHISTICATED ANALYTICAL INSTRUMENT FACILITY

IITM, CHENNAI-36

HR SEM-METHODOLOGY

An SEM is essentially a high magnification microscope, which uses a focussed scanned electron beam to produce images of the sample, both top-down and, with the necessary sample preparation, cross-sections. The primary electron beam interacts with the sample in a number of key ways:-

- Primary electrons generate low energy secondary electrons, which tend to emphasize the topographic nature of the specimen.
- Primary electrons can be backscattered which produces images with a high degree of atomic number (Z) contrast.
- Ionized atoms can relax by electron shell-to-shell transitions, which lead to either X-ray emission or Auger electron ejection. The X-rays emitted are characteristic of the elements in the top few μm of the sample.

SAMPLE PREPARATION:

Sample preparation can be minimal or elaborate for SEM analysis, depending on the nature of the samples and the data required. Minimal preparation includes acquisition of a sample that will fit into the SEM chamber and some accommodation to prevent charge build-up on electrically insulating samples. Most electrically insulating samples are coated with a thin layer of conducting material, commonly carbon, gold, or some other metal or alloy. The choice of material for conductive coatings depends on the data to be acquired: carbon is most desirable if elemental analysis is a priority, while metal coatings are most effective for high resolution electron imaging applications. Alternatively, an electrically insulating sample can be examined without a conductive coating in an instrument capable of "low vacuum" operation.

The SEM is carried out by using FEI-Quanta FEG 200-High Resolution Instrument.

Resolution : 1.2 nm gold particle separation on a carbon substrate

Magnification: From a min of 12x to greater than 1, 00,000 X

Application : To evaluate grain size, particle size distributions, material homogeneity and inter metallic distributions.

Experimental Procedure: Done at SAIF, IIT Madras, Chennai-36.

Sample preparation:

Sample preparation can be minimal or elaborate for SEM analysis, depending on the nature of the samples and the data required. Minimal preparation includes acquisition of a sample that will fit into the SEM chamber and some accommodation to prevent charge build-up on electrically insulating samples. Most electrically insulating samples are coated with a thin layer of conducting material, commonly carbon, gold, or some other metal or alloy. The choice of material for conductive coatings depends on the data to be acquired: carbon is most desirable if elemental analysis is a priority, while metal coatings are most effective for high resolution electron imaging applications. Alternatively, an electrically insulating sample can be examined without a conductive coating in an instrument capable of "low vacuum" operation.

Table-1

Colour characters of Amirtharasa Mathirai

S No	Solvent used	Under ordinary light	Under ultra violet light
1	PPM	Black	Black

PPM-Powdered plant material

Table-2

Physicochemical properties of Gandhaga parpam

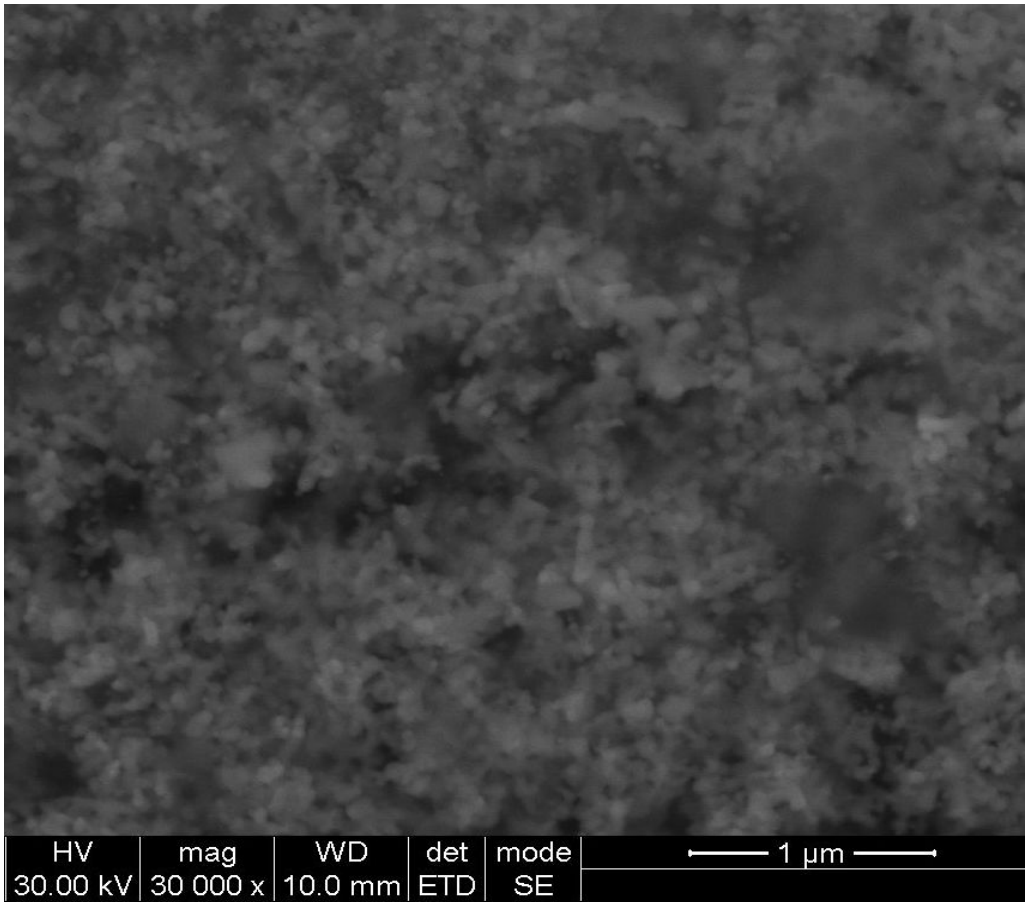
S. No.	Parameters	Values obtained (%w/w)	Heavy/ toxic metals	
1	Total ash value	9.73	Lead	BDL
2	Acid insoluble ash	0.95	Cadmium	BDL
3	Water soluble ash	5.9	Mercury	4.356mg/L
4	Moisture content	8.82	Arsenic	BDL
5	Foreign organic matter	7.98	Volatile oil	BDL

BDL-Below detection limit

Table-3

Colour, nature and percent yields of extracts of Gandhaga parpam

S.No.	Extract Solvents	Colour	Nature	% Yield(w/w)	SEM Particle size in micron	pH
1.	Water	Black	Solid	45	0.25 - 0.5	7.7-7.8



SOPHISTICATED ANALYTICAL INSTRUMENT FACILITY

IITM, CHENNAI-36

INDUCTIVELY COUPLED PLASMA OPTICAL EMISSION SPECTROMETRY

Introduction

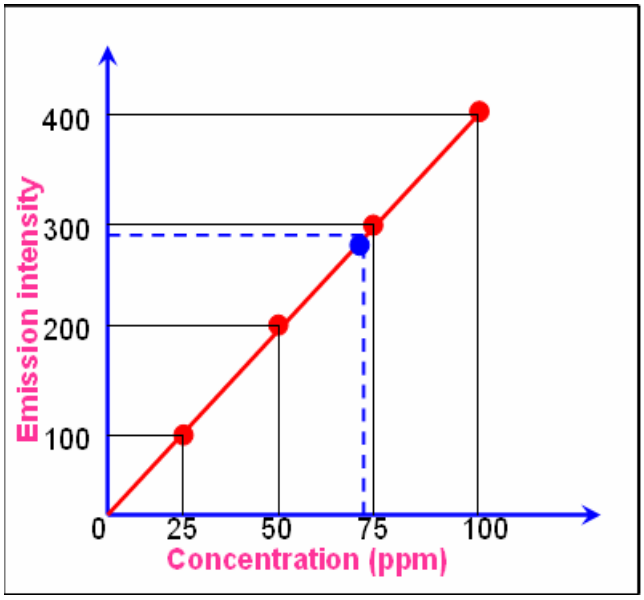
Inductively coupled plasma optical emission spectrometry (ICP-OES), is an analytical technique used for the detection of trace metals. It is a type of emission spectroscopy that uses the inductively coupled plasma to produce excited atoms and ions that emit electromagnetic radiation at wavelengths characteristic of a particular element. The intensity of this emission is indicative of the concentration of the element within the sample.

Principle

A Perkin-Elmer Optima ICP spectrometer is used for routine ICP-OES analysis. First, a high-energy radio frequency field is impinged upon a stream of argon gas. Then, a spark is used to ionize the argon gas, which forms a sustained plasma due to inductive coupling with the high energy radio frequency field and the continuous supply of fresh argon to the plasma torch. This plasma has solutions passed into it in the form of a fine aerosol. The aerosol is dried, the dried particles broken apart, and the individual elements are excited by interaction with the excited state argon in the plasma. As each atom returns to its ground state from the excited state, they emit light at wavelengths characteristic of the elements from which they originate. The emission intensity for each element is monitored for each standard solution and a calibration curve of emission intensity versus element concentration can be constructed.

Extraction of information

Obtaining qualitative information, i.e., what elements are present in the sample, involves identifying the presence of emission at the wavelengths characteristic of the elements of interest. Obtaining quantitative information, i.e., how much of an element is in the sample, can be accomplished using plots of emission intensity versus concentration called calibration curves. Typical calibration graph is illustrated below



Typical ICP Calibration curve

Experimental Procedure: Done at SAIF, IIT Madras, Chennai-36

Perkin Elmer Oplima 5300DV

40 M Hz RF generator;

Range: 165-782 nm;

Detection limit: Upto ppb level using SCD detector

Sample preparation – Microwave Digestion

- Weigh 0.25g of test sample and transfer into a liner provided with the instrument.
- Slowly add 9ml of Nitric acid or Sulphuric acid such that no piece of sample sticks on the slides.
- Mix thoroughly and allow reacting for few minutes.
- Place the liner in the vessel jacket.
- Close the screw cap hand-tight in clockwise direction.
- Seal the vessel and place in the rotor fixed in microwave.
- Set temperature to 180°C for 5 minutes; hold at 180°C for least 10 minutes.
- Allow the vessels to cool down to a vessel interior temperature below 60°C and to a vessel surface temperature (IR) below 50°C before removing the rotor.
- The digested sample was made upto 100ml with millipore water.
- If visible insoluble particles exist, solution could be filtered through whatmann filter paper.
- Transfer the digested solution into plastic containers and label them properly.

Advantages:

Good general-purpose technique

Good dynamic range

Accommodates organic solvents

Multi-elemental technique

Disadvantages

Cost of the instrument

Limits of detection

Sample volume requirements

Spectral interferences for unknown/complicated matrices

Sample description: Amirtharasa Mathirai

Instrument : PERKIN ELMER OPTIMA 5300DV ICP-OES

	Analyte	**Mean**
As	193.696	BDL
Ca	317.933	5.21 mg/L
Cd	226.502	BDL
Hg	253.652	BDL
Fe	238.204	1.254 mg/L
K	766.490	4.266 mg/L
Na	589.592	9.548 mg/L
P	213.617	5.692 mg/L
Pb	230.204	BDL
S	181.975	17.154 mg/L

References:

- OPTIMA 5000 SERIES Hardware Guide.
- Concepts, Instrumentation and Techniques in Inductively Coupled Plasma Optical Emission Spectrometry by Charles B. Boss and Kenneth J. Fredeen
- Handbook of Inductively Coupled Plasma Spectrometry By Michael Thompson and J. Nicholas Walsh.

NATIONAL INSTITUTE OF SIDDHA

AYOTHIDOSS PANDITHAR HOSPITAL

CHENNAI – 600 047.

POST- GRADUATE DEPARTMENT OF SIRAPPU MARUTHUVAM

PRE-CLINICAL AND CLINICAL STUDY ON "AMIRTHARASA MATHIRAI (INTERNAL MEDICINE) AND SURONITHA VATHA ENNAI (EXTERNAL MEDICINE) FOR THE TREATMENT OF UTHIRA VATHA SURONITHAM (RHEUMATOID ARTHRITIS)".

FORM I - SCREENING & SELECTION PROFORMA

1. SL.NO: ---------- **OP /IP NO: ----------**

2. NAME: ---------- **3. AGE/GENDER: -------**

4. RELIGION : ---------- **5. OCCUPATION: ----------**

6. INCOME: ----------

7. ADDRESS AND CONTACT NUM: ----------

8. INCLUSION CRITERIA

- Age: 20- 60 years ☐
- Sex: Both male and female ☐
- Symmetrical joint involvement ☐
- Arthritis of three or more joints ☐
- Rheumatoid factor positive or negative ☐
- Morning stiffness. ☐
- Deformities like Swan neck deformity and Button hole deformity ☐
- Swelling especially in the inter-phalangeal joint. ☐
- Patients willing for admission and stay in IPD or willing to attend OPD ☐
- Patient willing to undergo Radiological investigation and laboratory investigation. ☐

- Patient willing to sign the informed consent stating that he/she will consciously stick to the treatment during 48 days but can opt out of the trial of his/her own conscious discretion. ☐

The patients with complaints of any three of the clinical signs and symptoms said above may be included in this study

9. EXCLUSION CRITERIA:

- Drug addicts
- Pregnancy and lactation
- Tubercular arthritis
- Any other serious systemic illness
- Osteoarthritis
- Psoriatic arthritis
- Gouty arthritis
- Sexually transmitted diseases

ADMITTED TO TRAIL:	**YES**	**NO**
	☐	☐
	OPD	**IPD**
If Yes :	☐	☐

Date:

Station:

Signature of the Investigator:

Signature of the Lecturer: **Signature of the HOD**

NATIONAL INSTITUTE OF SIDDHA

AYOTHIDOSS PANDITHAR HOSPITAL

CHENNAI – 600 047.

POST- GRADUATE DEPARTMENT OF SIRAPPU MARUTHUVAM

PRE-CLINICAL AND CLINICAL STUDY ON "AMIRTHARASA MATHIRAI (INTERNAL MEDICINE) AND SURONITHA VATHA ENNAI (EXTERNAL MEDICINE) FOR THE TREATMENT OF UTHIRA VATHA SURONITHAM (RHEUMATOID ARTHRITIS)".

FORM II -HISTORY PROFORMA

1. SI NO:------ 2 OP /IP NO: ---------- 3. NAME :----------

4. AGE/GENDER: ------- **5. OCCUPATION: ----------**

6. MARITAL STATUS : Married/Unmarried

7. COMPLAINTS & DURATION:

8. PERSONAL HISTORY:

PERSONAL HABITS	YES	NO	IF YES, SPECIFY DURATION/QTY
Smoking			
Tobacco Chewing			
Alcohol			

9. HISTORY OF PREVIOUS ILLNESS:

10. FAMILY HISTORY

Whether this problem runs in family 1. Yes ☐ 2. No ☐

If yes, mention the relationship of affected person(s)

1._____ 2._____

11. DIETARY HABITS

1. Vegetarian ☐ 2. Non-Vegetarian ☐

12. MENSTRUAL AND OBSTETRIC HISTORY:

Date:

Station:

Signature of the Investigator:

Signature of the Lecturer: **Signature of the HOD**

NATIONAL INSTITUTE OF SIDDHA

AYOTHIDOSS PANDITHAR HOSPITAL

CHENNAI – 600 047.

POST - GRADUATE DEPARTMENT OF SIRAPPU MARUTHUVAM

PRE-CLINICAL AND CLINICAL STUDY ON "AMIRTHARASA MATHIRAI (INTERNAL MEDICINE) AND SURONITHA VATHA ENNAI (EXTERNAL MEDICINE) FOR THE TREATMENT OF UTHIRA VATHA SURONITHAM (RHEUMATOID ARTHRITIS)".

FORM III - CLINICAL ASSESSMENT PROFORMA

1. SI NO:------ 2 OP /IP NO: ---------- 3. NAME :----------

4. DATE OF ASSESSMENT : ----------

GENERAL EXAMINATION:

Height (cms) : …….

Weight (Kg) : …….

Temperature (°F) : …….

Pulse rate (per min) : …….

Heart rate (/min) : …….

Respiratory rate (/min) : …….

Blood pressure (mm/Hg) : …….

	Present	Absent
Pallor	☐	☐
Jaundice	☐	☐
Cyanosis	☐	☐
Lymphadenopathy	☐	☐
Pedal edema	☐	☐
Clubbing	☐	☐
Jugular vein pulsation	☐	☐

EXAMINATION OF OTHER SYSTEMS:

Cardiovascular System : …….

Respiratory System : …….

Gastro-intestinal system : …….

Central Nervous System : …….

Urogenital System : …….

Endocrine System : …….

SIDDHA SYSTEM OF EXAMINATION

1. ENVAGAI THERVU:

1. NAADI: [PULSE PERCEPTION]

Nadi Nadai	0th Day	8th Day	15th Day	22th Day	29th Day	36th Day	43rd Day	49th Day

2. NAA:[TONGUE]

Naa	Before Treatment	After Treatment

3. NIRAM: [COMPLEXION]

1. Vatham ☐
2. Pitham ☐
3. Kabam ☐

4. MOZHI: [VOICE]

1. High Pitched ☐
2. Low Pitched ☐
3. Medium Pitched ☐

5. VIZHI: [EYES]

0th Day	8th Day	15th Day	22nd Day	29th Day	36th Day	43rd Day	49th Day

6. MALAM; [BOWEL HABITS / STOOLS]

Malam	Before Treatment	After Treatment

7. URINE EXAMINATION

NEERKKURI	Before Treatment	After Treatment
Niram		
Edai		
Manam		
Nurai		
Enjal		

NEIKKURI	Before Treatment	After Treatment
Snake like pattern		
Annular/Ringed pattern		
Pearl beaded pattern		
Other pattern		

8. SPARISAM:

Sparisam	Before Treatment	After Treatment
	Warmth/cold/normal	Warmth/cold/normal

9. THEGI: [TYPE OF BODY CONSTITUTION]

Vatha Thegi	
Pitham Thegi	
Kabam Thegi	
Thondha Thegi	

10. NILAM: [LAND WHERE PATIENT LIVED MOST]

Kurinji ☐ Mullai ☐ Marutham ☐ Neithal ☐ Palai ☐

11. KAALAM

Kaarkalam (Aavani-Puratasi) ☐ Pinpanikalam (Maasi-Panguni) ☐

Koothirkalam (Iipasi-Karthigai) ☐ Ilavenil (Chithirai-Vaigasi) ☐

Munpanikalam (Marghazi-Thai) ☐ Muthuvenil (Aani-Aadi) ☐

12. GUNAM

Sathuvam ☐ Rasatham ☐ Thamasam ☐

13. AIMPORIGAL (SENSORY ORGANS)

	Before Treatment	**After Treatment**
Mei	Normal/Affected	Normal/Affected
Vai	Normal/Affected	Normal/Affected
Kan	Normal/Affected	Normal/Affected
Mookku	Normal/Affected	Normal/Affected
Sevi	Normal/Affected	Normal/Affected

14. KANMENDRIYANGAL (MOTOR ORGANS)

	Before Treatment	After Treatment
Kai	Normal/Affected	Normal/Affected
Kaal	Normal/Affected	Normal/Affected
Vaai	Normal/Affected	Normal/Affected
Eruvai	Normal/Affected	Normal/Affected
Karuvai	Normal/Affected	Normal/Affected

15. KOSANGAL (SHEATH)

	Before Treatment	After Treatment
Annamaya Kosam	Normal/Affected	Normal/Affected
Pranamaya Kosam	Normal/Affected	Normal/Affected
Manomaya Kosam	Normal/Affected	Normal/Affected
Vignanamaya Kosam	Normal/Affected	Normal/Affected
Ananthamaya Kosam	Normal/Affected	Normal/Affected

16.MUKKUTRAM: [UYIR THATHUKKAL]

A.VALI:

	Before Treatment	After Treatment
Praanan	Normal/Affected	Normal/Affected
Abaanan	Normal/Affected	Normal/Affected
Samaanan	Normal/Affected	Normal/Affected
Udhaanan	Normal/Affected	Normal/Affected
Viyaanan	Normal/Affected	Normal/Affected
Naagan	Normal/Affected	Normal/Affected
Koorman	Normal/Affected	Normal/Affected
Kirukaran	Normal/Affected	Normal/Affected
Devathathan	Normal/Affected	Normal/Affected
Dhananjeyan	Normal/Affected	Normal/Affected

B) AZHAL:

	Before Treatment	After Treatment
Analapitham	Normal/Affected	Normal/Affected
Prasakam	Normal/Affected	Normal/Affected
Ranjakam	Normal/Affected	Normal/Affected
Aalosakam	Normal/Affected	Normal/Affected
Saathakam	Normal/Affected	Normal/Affected

C) IYAM:

	Before Treatment	After Treatment
Avalambagam	Normal/Affected	Normal/Affected
Kilethagam	Normal/Affected	Normal/Affected
Pothagam	Normal/Affected	Normal/Affected
Tharpagam	Normal/Affected	Normal/Affected
Santhigam	Normal/Affected	Normal/Affected

17.SEVEN UDAL DHATHUS: (SEVEN SOMATIC COMPONENTS)

	Before Treatment	After Treatment
Saaram	Normal/Affected	Normal/Affected
Senneer	Normal/Affected	Normal/Affected
Oon	Normal/Affected	Normal/Affected
Kozhuppu	Normal/Affected	Normal/Affected
Enbu	Normal/Affected	Normal/Affected
Moolai	Normal/Affected	Normal/Affected
Sukkilam/ Suronitham	Normal/Affected	Normal/Affected

18.CLINICAL EXAMINATION AND ASSESSMENT OF JOINTS:

INSPECTION

Sl. No		0th Day	8th Day	15th Day	22nd Day	29th Day	36th Day	43rd Day	49th Day
1	Muscle spasm	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present /Absent	Present/ Absent	Present/ Absent	Present/ Absent
2	Local lymph adenopathy	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present /Absent	Present/ Absent	Present/ Absent	Present/ Absent
3	Major Joint Swelling	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present /Absent	Present/ Absent	Present/ Absent	Present/ Absent
4	Minor Joint Swelling	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present /Absent	Present/ Absent	Present/ Absent	Present/ Absent
5	Nodules	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present /Absent	Present/ Absent	Present/ Absent	Present/ Absent
6	Skin over the joint	Nor/ Reddis	Nor/ Reddis	Nor/ Reddis	Nor/ Reddis	Nor/ Reddis	Nor/ Reddis	Nor/ Reddis	Nor/ Reddis

PALPATION:

Sl. No		0th Day	8th Day	15th Day	22nd Day	29th Day	36th Day	43rd Day	49th Day
1	Tenderness	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present /Absent	Present/ Absent	Present/ Absent	Present/ Absent
2	Local heat	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present /Absent	Present/ Absent	Present/ Absent	Present/ Absent
3	Local lymph adenopathy	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present /Absent	Present/ Absent	Present/ Absent	Present/ Absent

MOVEMENTS

	0th Day	8th Day	15th Day	22nd Day	29th Day	36th Day	43rd Day	49th Day
PAIN Onset:	Sudden/ Gradual	Sudden/ Gradual	Sudden/ Gradual	Sudden/ Gradual	Sudden/ Gradual	Sudden/ Gradual	Sudden/ Gradual	Sudden/ Gradual
Nature of pain	Mild/ Moderate / Severe	Mild/ Moderate / Severe	Mild/ Moderate/ Severe	Mild/ Moderate / Severe	Mild/ Moderate / Severe	Mild/ Moderate / Severe	Mild/ Moderate /Severe	Mild/ Moderate/ Severe
Early morn Stiff ness	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent
Restric tion of move ments	Fully/ Partial/ No	Fully/ Partial/ No	Fully/ Partial/ No	Fully/ Partial/ No	Fully/ Partial/ No	Fully/ Partial/ No	Fully/ Partial/ No	Fully/ Partial/ No

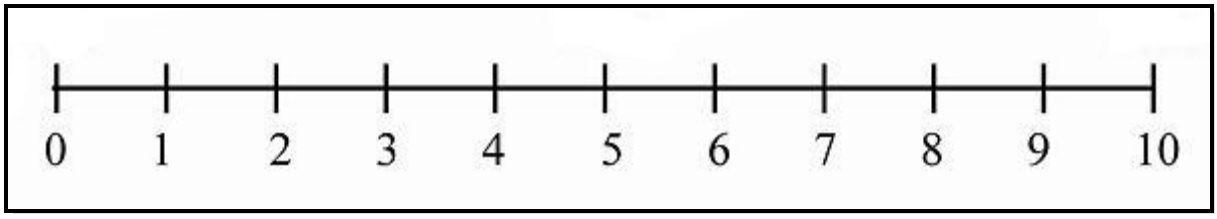
DEFORMITIES:

	0th Day	8th Day	15th Day	22nd Day	29th Day	36th Day	43rd Day	49th Day
Swan neck deformity	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent
Button hole deformity	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent
Z shaped deformity	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent
Ulnar deviation of hand	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent
Ulnar deviation of foot	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent
Hallus valgus	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent
Spindled appearance of fingers	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent

19.CLINICAL SYMPTOMS

CLINICAL SYMPTOMS	0^{th} Day	8^{th} Day	15^{th} Day	22^{nd} Day	29^{th} Day	36^{th} Day	43^{rd} Day	49^{th} Day
Arthritis of more than 3 joints								
Swelling of joints (especially in interphalangeal joints)								
Morning stiffness > 1 Hr								
Symmetrical arthritis								
Mental depression								
Anorexia								
Low grade fever								
Serum Rheumatoid factor								

UNIVERSAL PAIN ASSESSMENT SCALE



Grade 0	:	No Pain
Grade 1 -3	:	Mild pain
Grade 4-6	:	Moderate pain
Grade 7-10	:	Severe pain

GRADATION:

- G 1 – Able to perform normal duties
- G II – Moderate Restriction – Self care is possible
- G III – Marked restriction – Limited self care/ Some assistance required.
- G IV – Confined to bed or wheel chair

(Reference: Clinical Manual for Nursing Practise.(National Institute of Health Warren Grant Magnuson Clinical Center)

Date :

Station:

Signature of the Investigator:

Signature of the Lecturer: **Signature of the HOD**

NATIONAL INSTITUTE OF SIDDHA

AYOTHIDOSS PANDITHAR HOSPITAL

CHENNAI – 600 047.

POST- GRADUATE DEPARTMENT OF SIRAPPU MARUTHUVAM

PRE-CLINICAL AND CLINICAL STUDY ON "AMIRTHARASA MATHIRAI (INTERNAL MEDICINE) AND SURONITHA VATHA ENNAI (EXTERNAL MEDICINE) FOR THE TREATMENT OF UTHIRA VATHA SURONITHAM (RHEUMATOID ARTHRITIS)".

VARMAM THERAPY ASSESSMENT FORM

OBSERVATION CHART

SERIAL NO: **OP/IP NO:**

NAME: **AGE/ GENDER:**

COMPLAINTS AND DURATION:

VARMAM POINTS (IP PATIENTS):

1. Mudichu
2. Kavuli
3. Chavvu
4. Mozhi piralgai
5. Komberi
6. Viruthi
7. Ullangal vellai
8. Ullangai vellai

Sl. no	Date	Pain	Tenderness	Radiating pain	Stiffness	Numbness	Duration of relief	Other clinical features.
1								
2								
3								
4								

Sl. no	Date	Pain	Tenderness	Radiating pain	Stiffness	Numbness	Duration of relief	Other clinical features.
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								
31								

Sl. no	Date	Pain	Tenderness	Radiating pain	Stiffness	Numbness	Duration of relief	Other clinical features.
32								
33								
34								
35								
36								
37								
38								
39								
40								
41								
42								
43								
44								
45								
46								
47								
48								

OTHER REMARKS:

Date:

Station:

Signature of the Investigator:

Signature of the Lecturer: **Signature of the HOD**

NATIONAL INSTITUTE OF SIDDHA

AYOTHIDOSS PANDITHAR HOSPITAL

CHENNAI – 600 047.

POST -GRADUATE DEPARTMENT OF SIRAPPU MARUTHUVAM

PRE-CLINICAL AND CLINICAL STUDY ON "AMIRTHARASA MATHIRAI (INTERNAL MEDICINE) AND SURONITHA VATHA ENNAI (EXTERNAL MEDICINE) FOR THE TREATMENT OF UTHIRA VATHA SURONITHAM (RHEUMATOID ARTHRITIS)".

FORM IV - LABORATORY INVESTIGATIONS

1. SI NO:------ **2. OP /IP NO: ----------**
3. NAME :---------- **4. AGE/GENDER :-------**

BLOOD INVESTIGATION		NORMAL VALUES	BEFORE TMT (with date)	AFTER TMT (with date)
Hb(gm/dL)		M:13-18 W:11.-16		
T.RBC(milli/cu.mm)		M:4.5-6.5 W:3.5-5.5		
ESR (mm)	½ hr.	-		
	1 hr.	M: 0-10 W: 0-20		
T.WBC (/cu.mm)		4000-11000		
Differential Count (%)	Polymorphs	40-75		
	Lymphocytes	20-35		
	Monocytes	2-10		
	Esonophils	1-6		
	Basophils	0-1		
Platelets (lak/ cubic mm)		1,50000-500000		
Blood glucose (mg/dl)	Fasting	70-110		
	PP	80-140		

Lipid profile (mg/dl)	**Serum cholesterol**	**150-200**		
	HDL	**30-60**		
	LDL	**Upto 130**		
	VLDL	**40**		
	TGL	**Upto 160**		
RFT (mg/dl)	**Blood urea**	**16-50**		
	Serum creatinine	**0.6-1.2**		
LFT (mg/dl)	**Total bilirubin**	**0.2-1.2**		
	Direct bilirubin	**0.1-1.2**		
	Indirect bilirubin	**0.2-0.7**		
	Serum total protein	**6-8**		
	Serum Albumin	**3.5-5.5**		
	Serum globulin	**2-3.5**		
	SGOT	**0-40**		
	SGPT	**0-35**		
	Alkaline phosphatase	**80-290**		
Serum Uric acid		**M: 3-9,W 2.5-7.5**		
Serum calcium		**9-11**		
Serum phosphorus		**2-5**		

A.SPECIFIC TESTS

INVESTIGATION	NORMAL VALUES	BEFORE TMT (with date)	AFTER TMT (with date)
RA factor	**>10 IU/ml +VE**		
ASO titre	**>200 IU/ml + VE**		
CRP	**>6 mg/l + VE**		

B.URINE INVESTIGATION:

Urine investigation	Before TMT(with Date)	After TMT (With Date)
Albumin		
Fasting sugar		
PP sugar		
Deposits		
Bile salts		
Bile pigments		

C. RADIOLOGICAL EXAMINATIONS

X-Ray Affected area- AP view, Lateral view

	BEFORE TMT	AFTER TMT
XRAY CHANGES		

Date:

Station:

Signature of the Investigator:

Signature of the Lecturer: **Signature of the HOD**

NATIONAL INSTITUTE OF SIDDHA
AYOTHIDOSS PANDITHAR HOSPITAL
CHENNAI – 600 047.

POST- GRADUATE DEPARTMENT OF SIRAPPU MARUTHUVAM

PRECLINICAL AND CLINICAL STUDY ON "AMIRTHARASA MATHIRAI (INTERNAL MEDICINE) AND SURONITHA VATHA ENNAI (EXTERNAL MEDICINE) FOR THE TREATMENT OF UTHIRA VATHA SURONITHAM (RHEUMATOID ARTHRITIS)".

FORM V: INFORMED CONSENT FORM

"I have read the foregoing information, or it has been read to me. I have had the opportunity to ask questions about it and any questions I have asked have been answered to my satisfaction.

I consent voluntarily to participate in this study and understand that I have the right to withdraw from the study at any time without in any way it affecting my further medical care". "I have received a copy of the information sheet/consent form".

Date:

Signature of the participant:

In case of illiterate participant

"I have witnessed the accurate reading of the consent form to the potential participant, and the individual has had the opportunity to ask questions. I confirm that the individual has given consent freely."

Date:

Signature of a witness Left thumb Impression of the Participant

(Selected by the participant bearing no connection with the survey team)

Date:

Station:

Signature of the Investigator:

Signature of the Lecturer: **Signature of the HOD**

தேசிய சித்த மருத்துவ நிறுவனம், சென்னை 47

அயோத்திதாஸ் பண்டிதர் மருத்துவமனை

சென்னை

உதிரவாத சுரோணிதம் நோய்க்கான சித்த மருந்துகள் **அமிர்தரச மாத்திரை** (உள் மருந்து) மற்றும் **சுரோணித வாத எண்ணெய்** (வெளி மருந்து) ஆகியவற்றின் பரிகரிப்புத் திறனைக் கண்டறியும் மருத்துவ ஆய்விற்கான தகவல் படிவம்

ஒப்புதல் படிவம்

ஆய்வாளரால் சான்றளிக்கப்பட்டது

நான் இந்த ஆய்வு குறித்த அனைத்து விபரங்களையும் நோயாளிக்குப் புரியும் வகையில் எடுத்துரைத்தேன் என உறுதியளிக்கிறேன்.

தேதி : **கையொப்பம் :**

இடம்: **பெயர்** :

நோயாளியின் ஒப்புதல்

என்னிடம் இந்த மருத்துவ ஆய்வின் காரணத்தையும், மருந்தின் தன்மை மற்றும் மருத்துவ வழிமுறை பற்றியும், தொடர்ந்து எனது உடல் இயக்கத்தை கண்காணிக்கவும், அதனை பாதுகாக்கவும் பயன்படும் மருத்துவ ஆய்வுக்கூட பரிசோதனைகள் பற்றி திருப்தி அளிக்கும் வகையில் ஆய்வு மருத்துவரால் விளக்கிக் கூறப்பட்டது.

நான் இந்த மருத்துவ ஆய்வின் போது, காரணம் எதுவும் கூறாமல், எப்பொழுது வேண்டுமானாலும் இந்த ஆய்விலிருந்து என்னை விடுவித்து கொள்ளும் உரிமையை தெரிந்திருக்கின்றேன். நான் என்னுடைய சுதந்திரமாக தேர்வு செய்யும் உரிமையைக் கொண்டு **உதிரவாத சுரோணிதம்** நோய்க்கான **அமிர்தரச மாத்திரை** (உள் மருந்து) மற்றும் **சுரோணித வாத எண்ணெய்** (வெளி மருந்து) மருந்துகளின் பரிகரிப்புத் திறனைக் கண்டறியும் மருத்துவ ஆய்விற்கு என்னை உட்படுத்த ஒப்புதல் அளிக்கிறேன்.

கையொப்பம் : **சாட்சிக்காரர் கையொப்பம் :**

பெயர் : **பெயர்** :

தேதி : **உறவுமுறை** :

இடம் :

விரிவுரையாளர் கையொப்பம் : **துறைத்தலைவர் கையொப்பம் :**

NATIONAL INSTITUTE OF SIDDHA

AYOTHIDOSS PANDITHAR HOSPITAL

CHENNAI – 600 047.

POST- GRADUATE DEPARTMENT OF SIRAPPU MARUTHUVAM

PRE-CLINICAL AND CLINICAL STUDY ON "AMIRTHARASA MATHIRAI (INTERNAL MEDICINE) AND SURONITHA VATHA ENNAI (EXTERNAL MEDICINE) FOR THE TREATMENT OF UTHIRA VATHA SURONITHAM (RHEUMATOID ARTHRITIS)".

FORM VI - WITHDRAWAL FORM

1. SI NO: ------ 2 OP /IP NO: --------- 3. NAME: ----------

4. AGE/GENDER: -------

5. OCCUPATION: ---------- 6. SOCIAL STATUS: ----------

7.CONTACT NUM: ----------

8. DATE OF TRIAL COMMENCEMENT: ----------

9. DATE OF WITHDRAWAL FROM TRIAL: ----------

10. REASONS FOR WITHDRAWAL:

- Long absence at reporting : Yes/ No
- Irregular treatment: Yes/ No
- Shift of locality : Yes/No
- Increase in severity of symptoms: Yes/No
- Development of severe adverse drug reactions: Yes/No

Date:

Station:

Signature of the Investigator:

Signature of the Lecturer: **Signature of the HOD**

NATIONAL INSTITUTE OF SIDDHA

AYOTHIDOSS PANDITHAR HOSPITAL

CHENNAI – 600 047.

POST- GRADUATE DEPARTMENT OF SIRAPPU MARUTHUVAM

PRECLINICAL AND CLINICAL STUDY ON "AMIRTHARASA MATHIRAI (INTERNAL MEDICINE) AND SURONITHA VATHA ENNAI (EXTERNAL MEDICINE) FOR THE TREATMENT OF UTHIRA VATHA SURONITHAM (RHEUMATOID ARTHRITIS)".

FORM VII – PATIENT INFORMATION SHEET

Name of Principal Investigator : Dr. S Kumar.

Name of the institute : National Institute of Siddha,
Tambaram Sanatorium,
Chennai-47.

INFORMATION SHEET FOR PATIENTS PARTICIPATING IN THE OPEN CLINICAL TRIAL.

I, Dr. **S. Kumar,** studying M.D(Siddha) at National Institute of Siddha, Tambaram Sanatorium is doing a trial on **Uthiravatha Suronitham (Rheumatoid Arthritis).** Rheumatoid arthritis (RA) is a most common persistent inflammatory arthritis, occurring throughout the world and in all ethnic groups. In this regard, I am in a need to ask you few questions. I will maintain confidentiality of your comments and data obtained. There will be no risk of disclosing your identity and no physical, psychological or professional risk is involved by taking part in this study. Taking part in this study is voluntary. No compensation will be paid to you for taking part in this study.

You can choose not to take part. You can choose not to answer a specific question. There is no specific benefit for you if you take part in the study. However, taking part in the study may be of benefit to the community, as it may help us to understand the problem of defaulters and potential solutions.

If you agree to be a participant in this study, you will be included in the study primarily by signing the consent form and then you will be given the internal medicine **Amirtharasa Mathirai** (Internal medicine -130mg BD with water for 48 days) and

Suronitha Vatha Ennai (external medicine) if you wish to stay in the In Patient ward Varmam Treatment will be provided to you assuring that you will not be definitely hurt in any course of treatment.

The information I am collecting in this study will remain between you and the principal investigator (myself). I will ask you few questions through a questionnaire. The questionnaire will take approximately 20 minutes of your time.

If you want more information about this study before taking part, you can ask me all the questions you want or contact Dr. S. Kumar, PG Scholar cum principal investigator of this study, attached to National Institute of Siddha,Chennai-47. You can also contact the Member-secretary of Ethics committee, National Institute Siddha, Chennai 600047, Tel No : 9003541718, for rights and participation in the study.

தேசிய சித்த மருத்துவ நிறுவனம், சென்னை 47

அயோத்திதாஸ் பண்டிதர் மருத்துவமனை

சென்னை

உதிரவாத சுரோணிதம் நோய்க்கான சித்த மருந்துகளின் **அமிர்தரச மாத்திரை** (உள் மருந்து) மற்றும் **சுரோணித வாத எண்ணெய்** (வெளி மருந்து) பரிகரிப்புத் திறனைக் கண்டறியும் மருத்துவ ஆய்விற்கான தகவல் படிவம்

முதன்மை ஆராய்ச்சியாளர் பெயர் : **மருத்துவர் ச.குமார்,**

நிறுவனத்தின் பெயர் : தேசிய சித்த மருத்துவ நிறுவனம்,
தாம்பரம் சானட்டோரியம்,
சென்னை 600047.

தேசிய சித்த மருத்துவ நிறுவனத்தில் பட்ட மேற்படிப்பு பயின்று வரும் நான் மருத்துவர் ச.குமார், **உதிரவாத சுரோணிதம்** என்னும் நோயில் மருத்துவ ஆராய்ச்சியில் ஈடுபட்டுள்ளேன்.

உதிரவாத சுரோணித நோய் (மூட்டு நோய்) என்னும் நோயானது சித்த மருத்துவத்தில் சிறு, பெரு மூட்டுகளில் வலி,வீக்கத்தை உண்டாக்கி காலையில் விறைப்பு தன்மையை உண்டாக்கும் சில சமயங்களில் சிறு சுரத்தையும் உண்டாக்கும் இது பரவக் கூடிய நோய் அல்ல.

இந்த ஆராய்ச்சி சம்பந்தமாக சில கேள்விகளைக் கேட்கவும், தேவையான ஆய்வகப் பரிசோதனைக்கு தங்களை உட்படுத்தவும் உள்ளேன்.

இந்த ஆராய்ச்சிக்கு தாங்கள் விருப்பத்தின் பேரில் உட்படும் பட்சத்தில் உள்மருந்தாக அமிர்தரச மாத்திரை 130 மி.கி தண்ணீரில் 2 வேளை (காலை,மாலை)

உணவுக்குப் பின் ஒரு மண்டலம் (48 நாட்கள்) உட்கொள்ள வேண்டும். வெளி மருந்தாக சுரோணித வாத எண்ணெய்யை தடவ வேண்டும். வெளி நோயாளர்கள் 7 நாட்களுக்கு ஒருமுறை மருத்துவமனைக்கு வரவேண்டும். உள் நோயாளியாக தங்க விருப்பம் தெரிவிக்கும் பட்சத்தில் நோய்க்குத் தகுந்த வர்மச் சிகிச்சை அளிக்கப்படும்.

இந்த மருந்து சிறப்பாக **உதிரவாத சுரோணிதம்** நோய்க்காக அங்கீகரிக்கப்பட்ட சித்த மருத்துவ நூலில் கூறப்பட்டுள்ளது.

இந்த ஆராய்ச்சியில் தங்களை அனுமதித்த பிறகு உங்களுக்கு விருப்பம் - இல்லையெனில் எப்போது வேண்டுமானாலும் ஆராய்ச்சியில் இருந்து விளகிக் கொள்ள உரிமை உள்ளது.

இந்த ஆராய்ச்சி சம்பந்தமாக நோயின் தன்மை பற்றியும் மற்ற விபரங்களுக்கும் முதன்மை ஆராய்ச்சியாளரான மருத்துவர்: ச. குமார் (பட்ட மேற் படிப்பாளர் சிறப்பு மருத்துவ துறை) அணுகவும். கைப்பேசி எண் 9500060011

மேலும் இந்த ஆராய்ச்சிக்கு தக்க அனுமதிச் சான்று (IEC) பெறப்பட்டுள்ளது.

இந்த மருந்து முற்றிலும் பாதுகாப்பான மூலிகைகளைக் கொண்டு தயாரிக்கப் பட்டுள்ளது. பக்க விளைவுகளை ஏற்படுத்தாது.

மேலும் உணவு முறையில் மருத்துவரால் கூறப்படும் பத்தியம் காக்குமாறு அறிவுறுத்த படுகிறது.

இது சம்பந்தமான தங்களது அனைத்து விவரங்களும் ரகசியமாக வைக்கப்படும் என உறுதிஅளிக்கிறேன்.

இதில் பயணப்படி முதலிய எந்த உதவித் தொகையும் வழங்கப் பட மாட்டாது.

இந்த ஆராய்ச்சியின் போது உடலுக்கு வேறு பாதிப்பு ஏற்படும் பட்சத்தில் தேசிய சித்த மருத்துவமனையில் தக்க சிகிச்சை அளிக்கப்படும்.

NATIONAL INSTITUTE OF SIDDHA

AYOTHIDOSS PANDITHAR HOSPITAL

CHENNAI – 600 047.

POST- GRADUATE DEPARTMENT OF SIRAPPU MARUTHUVAM

PRE-CLINICAL AND CLINICAL STUDY ON "AMIRTHARASA MATHIRAI (INTERNAL MEDICINE) AND SURONITHA VATHA ENNAI (EXTERNAL MEDICINE) FOR THE TREATMENT OF UTHIRA VATHA SURONITHAM (RHEUMATOID ARTHRITIS)".

FORM VIII - DRUG COMPLIANCE FORM

SERIAL NO:

OP/IP NO:

NAME:

AGE/ GENDER:

DRUG NAME: Amirtharasa Mathirai (Internal medicine -130 mg BD)**:**

OPD:

On 1st day-Date:	Drugs issued: 130 gms	Drugs returned:	gms
On 8th day-Date:	Drugs issued: 130 gms	Drugs returned:	gms
On 15th day-Date:	Drugs issued: 130 gms	Drugs returned:	gms
On 22nd day-Date:	Drugs issued: 130 gms	Drugs returned:	gms
On 29th day-Date:	Drugs issued: 130 gms	Drugs returned:	gms
On 36th day-Date:	Drugs issued: 130 gms	Drugs returned:	gms
On 43rd day-Date:	Drugs issued: 130 gms	Drugs returned:	gms

IPD:

Day	Date	Morning	Evening	Day	Date	Morning	Evening
Day 1				Day 2			
Day 3				Day 4			
Day 5				Day 6			
Day 7				Day 8			
Day 9				Day 10			
Day 11				Day 12			
Day 13				Day 14			
Day 15				Day 16			
Day 17				Day 18			
Day 19				Day 20			
Day 21				Day 22			
Day 23				Day 24			
Day 25				Day 26			
Day 27				Day 28			
Day 29				Day 30			
Day 31				Day 32			
Day 33				Day 34			
Day 35				Day 36			
Day 37				Day 38			
Day 39				Day 40			
Day 41				Day 42			
Day 43				Day 44			
Day 45				Day 46			
Day 47				Day 48			

Date:

Station:

Signature of the Investigator:

Signature of the Lecturer: **Signature of the HOD**

NATIONAL INSTITUTE OF SIDDHA

AYOTHIDOSS PANDITHAR HOSPITAL

CHENNAI – 600 047.

POST- GRADUATE DEPARTMENT OF SIRAPPU MARUTHUVAM

PRECLINICAL AND CLINICAL STUDY ON "AMIRTHARASA MATHIRAI (INTERNAL MEDICINE) AND SURONITHA VATHA ENNAI (EXTERNAL MEDICINE) FOR THE TREATMENT OF UTHIRA VATHA SURONITHAM (RHEUMATOID ARTHRITIS)".

FORM IX - DIETARY ADVICE FORM

சேர்க்கக் கூடிய உணவுகள் (Diet to be included):

காய்கள் (Vegetables):

கத்தரிப்பிஞ்சு	(Unripe brinjal)
முருங்கைப்பிஞ்சு	(Unripe drumstick)
அவரைப்பிஞ்சு	(Unripe Dolichos bean)

கீரைகள் (Greens):

பொன்னாங்காணி	(Sessile plant [*Alternanthera sessilis*])
மூக்கிரட்டை	(Hog weed [*Boerhaavia diffusa*])
தூதுவேளை	(Climbing brinjal [*Solanum trilobatum*])
முருங்கைக்கீரை	(Leaves of Drumstick [*Moringa oleifera*])
கறிவேப்பிலை	(Curry leaf [*Murraya koenigii*])
முடக்கறுத்தான்	(Winter cherry [*Cardiospermum halicacabum*])
அறுகீரை	(*Amaranthus tristis*)
கரிசாலை	(trailing eclipta [Eclipta prostrate])

பழங்கள் (Fruits):

மாதுளை	(Pomegranate)
ஆப்பிள்	(Apple)
பப்பாளி	(Papaya)
ஆரஞ்சு	(Orange)
பேரீச்சை	(Dates)
அத்தி	(Fig)
நாவல்	(Jambul [*Syzygium cumini*])

அசைவம் (Non-vegetarian diet):

வெள்ளாட்டுக்கறி	(Meat)
காடை	(Quail)
சிறு இறால் மீன்	(Prawn)

தவிர்க்க வேண்டியவைகள் (Diet to be avoided):

சுரை	(Bottle gourd)
பூசணி	(Pumpkin)
வெள்ளரிக்காய்	(Cucumber)
புடலை	(Snake gourd)
பீர்க்கு	(Ridged gourd)
உளுந்து	(Black gram)
மொச்சை	(Indian butter Bean)
காராமணி	(Cow gram)
கொள்ளு	(Horse gram)
கடுகு	(Mustard)
எண்ணெய்	(Gingelly oil)
புளிப்பு	(Sour)
உப்பு	(Salt)
வாயுப் பொருட்கள்	(Vatha diet)
உருளைக் கிழங்கு	(Potato)
வாழைக் காய்	(Plantain)
புகையிலை	(Tobacco)
மது அருந்துதல்	(Alcohol)
பெண்போகம் (இச்சா பத்தியம்)	[Sexual intercourse]

மருத்துவ அறிவுரை (Medical advice):

- ஈரமில்லாத் தரையிலும், படுக்கையிலும் படுத்தல் வேண்டும் (Should avoid sleeping in wet floor or mattress)
- குளிர் காற்று படும்படியான இடத்தில் இருப்பதை தவிர்க்கவும் (Try to avoid cool breeze)
- தலையணை பயன்படுத்துவதை தவிர்க்க வேண்டும் (Should avoid sleeping in Pillow).

NATIONAL INSTITUTE OF SIDDHA

AYOTHIDOSS PANDITHAR HOSPITAL

CHENNAI – 600 047.

POST- GRADUATE DEPARTMENT OF SIRAPPU MARUTHUVAM

PRECLINICAL AND CLINICAL STUDY ON "AMIRTHARASA MATHIRAI (INTERNAL MEDICINE) AND SURONITHA VATHA ENNAI (EXTERNAL MEDICINE) FOR THE TREATMENT OF UTHIRA VATHA SURONITHAM (RHEUMATOID ARTHRITIS)".

FORM X - ADVERSE REACTION REPORTING FORM

SERIAL NO:

OP/IP NO:

NAME: **AGE:** **GENDER:**

DATE OF TRIAL COMMENCEMENT:

DATE OF OCCURRENCE OF THE ADVERSE REACTION: **TIME:**

DESCRIPTION OF ADVERSE REACTION:

MANAGEMENT:

Date:

Station:

Signature of the Investigator:

Signature of the Lecturer: **Signature of the HOD**